

Meetings of Public Companies.

GOLD MINING ASSOCIATION OF CANADA.

The annual general meeting of shareholders was held at the Cannon-street Hotel, on Jan. 30.

The Right-Hon. the Earl of DENBIGH in the chair.

The SECRETARY read the notice convening the meeting, as also the minutes of the previous meeting, and the report together with the accounts were duly submitted. The report was as follows:—

The directors in submitting their second annual report regret that the anticipations of last year have not been fulfilled, but their confidence in the undertaking has, nevertheless, not been shaken, and it is confidently expected that the ensuing season will see their expectations realised.

The difficulties with which our manager has had to contend have already been advised by circular to the shareholders, and may be summarised under three heads:—

Firstly, the lateness of the season.
Secondly, the hindrances caused by the abnormally tempestuous weather and carrying away of our bridge, &c., by the floods; and
Thirdly, the inability of getting the canal completed until Sept. 22, at which time the season was drawing to a close.

The first of these causes may, of course, happen again at any future period, but the second and third will not, for the pipes are now suspended across the river by a wire-rope instead of by bridging, and the canal is to all intents and purposes completed; therefore, these drawbacks will not have to be encountered again.

The quantity of gold obtained has been during the present season in all 774 dwt., as against 1790 dwt. in the last year. This, of course, taken by itself cannot be considered satisfactory, but allowance must be made for the drawbacks which have already been enumerated, as also for the unfortunate oversight of our manager, who, at a time when the directors were most anxiously waiting for the result of his final clean-up, allowed the frost to overtake him in his operations, and thus left the spring of this year to determine the result of his workings. The following extract from Mr. Humphrey's letter of Nov. 11 will explain the position:—

"I also enclose copy of diary for week ending 8th inst. You will see from the latter that we have had a sudden frost which has stopped our washing."

"This is to be particularly regretted as we have not been able to clean-up the cut at No. 2 hydraulic. I had hoped that we could push that cut far enough ahead to enable us to clean-up the bottom, and get out the gold that had accumulated there with the gravel; we have not been able to do this, and, as a consequence, nearly all of the gold in the gravel that we had washed there remains, and must remain there for the winter. We cleaned up with a good deal of difficulty to-day part of the sluice at that place, and got about 60 dwts.; but, as I said before, not having got far enough ahead to clean up the cut, we could not get out the gold. This frost has come on very suddenly and unexpectedly, the weather previously having been very fine and warm."

At the commencement of the present month the directors had an interview with Mr. S. G. Phillips, a gentleman of very considerable experience in hydraulic mining in California. This gentleman speaks most hopefully of the prospects of the company, and states that one quarter only of the gold to the cubic yard estimated to be in the ground should alone by the hydraulic system pay most handsomely, and there is no reason why this cannot be done. Mr. Phillips, however, thinks that some slight modification in the manner of working the property might with advantage be adopted, and as he was leaving for America within two days from this interview, Mr. Humphrey was cabled and written to requesting him to meet Mr. Phillips on his arrival, and thoroughly go into the subject under discussion, and let the directors know immediately the result of his interview. One great point is that if the most important suggestion of Mr. Phillips be carried out the necessary work to accomplish it can be proceeded with at once, and thus the months of February, March, and April at least can be utilised in pushing forward the alterations before the season for hydraulic commences. It may be added that the directors place great reliance in Mr. Phillips' opinion as to the value of their property, and on his suggestions for working it.

The treatment of the black sand has been under consideration, but it has been deemed expedient to let Mr. Humphrey's undivided attention be given to the working of the gravel before proceeding in this matter.

An exhaustive report on the company's property by Mr. W. Hamilton Merritt, F.G.S., of Toronto, has just been received, and a copy of the same is now enclosed.

The CHAIRMAN said that he met the shareholders with feelings of satisfaction in regard to the future prospects of the company, especially after the sanguine manner in which Mr. Phillips had expressed himself as to the value of their property. After great hindrances, caused chiefly by the variable weather, the canal had at length been completed, and everything would be in readiness to commence gold washing in the spring. Since the accounts were presented in January last the expenditure in London had been considerably reduced, and would be still further curtailed during the present year, by the directors foregoing their fees.

After a short discussion, it was agreed that the meeting should be adjourned until the end of June or beginning of July, so as to enable the directors to inform the shareholders of the result of the first clean-up.

A vote of thanks to the Chairman terminated the proceedings.

GOLD HILL MINES.

An extraordinary general meeting of shareholders was held at the Cannon-street Hotel, on Tuesday, to hear a report from Colonel COCHRANE on his visit to the mines.

Colonel COCHRANE occupied the chair.

The CHAIRMAN: Gentlemen, I suppose you will take as read the notice calling this meeting, which, as you are aware, is for the purpose of hearing my report with regard to my visit to the gold mines. I have written a long report, and a great deal of it contains matters which I consider right the board should be made acquainted with as to the different things necessary, and also as to what was done during my stay there; but I think I can tell you what you no doubt wish to hear:—What is your property, what is the state of it, and what is it likely to come to? My great anxiety, being on the committee and having had some experience, unfortunately, in visiting some other mines, I was very anxious, finding that there were no returns coming and there were large sums of money being sent out, to enquire into the matter. I mentioned to the board that I would be very happy—indeed, I wished very much—to go out and see what the management was, and what was really the state of our property. The shareholders, no doubt, getting tired, and were anxious really to see the state the property was in. I arrived there about the end of October, and I must say I went there not with any feeling that I should see what I did see, for I must express my utter astonishment when I drove into the place to see one another all these great shafts along the line as I drove up the village there. I was fortunate enough to meet a Mr. Holmes, who is really one of the vendors. He is Mayor of Salisbury, and I must say he is one of the best samples of an American I ever met with. He is looked up to with the greatest respect in Salisbury, and I was fortunate enough to meet him at the mine. I had a great deal of conversation upon the management and former history of the mine. I must tell you there is no doubt about it that this mine would never have fallen into our hands had it not been for the Civil War. Many of the miners left the village to take part in the war; some returned, but most of them were shot down. Mr. Holmes told me when they returned that really there was no money to buy machinery or anything of the kind. What they did endeavour to do they tried with Chilian mills, and they never attempted to take out any of the ore that would not pay well on those mills. I have taken the trouble to have the whole place photographed. Out of the burrows, where there are several thousands of tons, without the slightest exaggeration, the men lived for two years upon what they got from those burrows. To prove that they must have got money out of them, I managed to get gold out of the very dirt which they have left, and which has been on the surface for 40 years. Here is a bar of gold and this is the dirt from which I took it. There is nothing which looks more like lime. It is a great curiosity. Your property consists of 500 acres of land. The Randolph Mine, which is 700 ft. deep, they are now pumping out—that is only since the board considered that it was well to open out the Randolph Mine, which really ought to have been done originally as well as the Old Field. Unfortunately our manager there wrote home, and said that a certain sum was required to open that out. At the time it was considered that that was a very large sum, and there was a very good report of the Bernhard Mine. No doubt the tributors had taken the best part of it. A certain amount was got out of the Bernhard Mine, but instead of sinking a shaft they tried and followed up some veins, which was a very expensive job, and proved no success at the time, but, I am happy to say, so far as the Bernhard is concerned a great improvement has taken place. I had better begin with the Randolph Mine; that was worked before the Civil War, and I must say they made desperate efforts to get out all the water, for when we got down a certain depth we found the pumps were almost through by the copper water which destroys everything there, and we found they had actually bound their pumps round with iron bands—they could not afford to buy new pumps to put down. We have got down now about 350 ft. When we get down to 400 ft. there are levels it is supposed we shall be able to get into to open the 600. We then come upon what they call the Great Sulphur lode as well as cut to the Texas shoot. I picked up a piece of stone with which the surface was covered, and I took it to one of the old miners—Mr. Prim, and he said it was part of the Texas shoot. So if we can get to that, which there is no doubt we shall, that will be of a very rich quality. We have been getting the water out, but rather slowly to what we ought to have done, for the reason that we had only one boiler to the engine. But before I came away the boilers had arrived. They are of 50-horse power each, and I have no doubt they are now hard at work. Mr. Rickard, the mining captain, is very sanguine of getting the water out, and when I left he said he thought in a month or six weeks he could get the body of water out. There is no mistake that they took an immense quantity of gold out of that place. Some of the photographs will show you the immense amount of tailings there are there. When we get out of the water we shall get into sulphur lode, 7 ft. thick. Then the next shaft is what they call the centre shaft, which is down upon the lode 400 ft., but there are levels driven there from the Randolph shaft to it. It was crushed in, but fortunately for us, not to so great an extent as the south shaft, which is the next one on the line. There is the Randolph, the centre shaft, the south shaft, and the Line shaft. The Line shaft will come down to a body of ore sooner than any other. That is what they consider. In the south shaft they came to a terrible crush, and the men had to work with their belts around them and ropes attached to them, for fear what they were working upon might give way at any moment. We thought it was right under the circumstances that

It should be stopped, but the old miners we have employed—Prim and Cross—said to me, "Colonel, there is a vein that runs far from this that I am quite sure if we drive into it we shall get a very good vein." And he allowed them to do it, but in the end they proved they were a little above it. From a letter, however, I received this morning this old miner is determined he will cut the lode, and I suppose shortly we shall hear of it. The next in the same line is the Line shaft. That as I have told you will come down the quickest upon the ore. The sulphur lode is very rich, and one of the great things we have to look forward to is that some clever fellow will invent the means of extracting gold from the sulphur. There are thousands of tons of this lying there exposed to the air. The villagers were in the habit of going with rockers some distance down the creek, and they make a good day's work there; after the heavy rains gold is to be seen there, believe when that is opened it will be a magnificent mine; 700 ft. is not a great depth to mine. About 500 yards or 1000 yards from the Randolph shaft you come upon what they discovered when they were digging a reservoir—it is called the Reservoir vein. I have a piece of it here. It was very rich indeed, but unfortunately a flint slide came in and cut it out, and it cannot be followed down in consequence of the water. But that will all come in when we are working our way up from the Randolph shaft. Then you come to the Bernhard Mine. That is 600 or 700 yards from it. That is one they have been working, and which has not met with the success I consider it ought to have done. I consider it would have been better in many instances if the money had been applied to mere unwatering of these places and developing them instead of laying out thousands of pounds in stamps and tramways and that sort of thing. Of course they will be very valuable. My impression is that the number of stamps you will have will be of little use to you. When all the mines are set to work there must be an enormous amount of ore got out of those places. I come now to the Old Field. It is ¼ of a mile from the other shafts. Evidently the whole extent for these veins run right up through that country. When we came to the Old Field we had a deep interest about that. When I arrived they were very short of good water for the boilers. There are two things you cannot do without in that country—those are water and wood. The water from these sulphur mines becomes so impregnated with destructive matter that you will be astonished to hear there are four or five large boilers entirely ruined. You can cut the iron with a knife. It is of vital necessity that you should have good water. The water of the valley was brought for the boilers, and in dry weather this water gives out to a certain extent. Just as I arrived there was no water; I was then trying the experiment with this dirt at the stamps, and they were obliged to stop the Randolph pumping-engine for a short time. I had the pleasure of meeting there another good American, and that was Mr. Mooney, an old farmer, who, with his sons, fought through the war. I consulted him and Mr. Holmes a great deal, because they were thoroughly intimate with everything connected with that property. With regard to the Old Field, he said to me, "Colonel, I wonder you have not used the water from that." I said, "I have not been here any time yet, but is the water good?" He said, "It is the best water you can have for boilers." In fact, it was drinking water. He also told me of the enormous amount of gold which had been taken out. I have heard that out of that 215,000 were taken. I had always two or three men with me prospecting, and one of them said, "I think there is a vein here which, if we could cut it, would show good gold." A shaft had been sunk down there to about 2 ft. inside from the shaft in the solid ground. One of the men began digging down, and we came to a vein. As we moved on every bit of ore which was taken out was panned, so as to see what gold there was in it. When we began panning in the first instance there was what they call a point in it, and when we got down 25 ft. it panned about 2 in. In the assay you have had the top, the middle, and the bottom as far as we have gone, and that has assayed nearly 2 ozs. to the ton. The only thing I could compare your property to is that it is as if some great bombshell had fallen in and blown up the whole ground. I argued would it not be worth while to make an opening of 40 ft. deep, and catch all these veins which make it so expensive in following out one after another. But the object they have now in view is to obtain from below and not from above. When the Bernhard shaft was being worked they managed to get down to 130 ft. They then got crushed in and sunk a shaft close to it. For the purpose of getting into the shaft they drove their cross-cut on the top of the level of the Pennington shaft, and when we get down there and get the water back to the level of the Pennington shaft, we began to drive this cross-cut, and found a large hole which had been blocked up with wood, and the wood evidently been flooded out by the water which was in the workings of the old Pennington shaft. Therefore, they were not able to get anything out. They had made desperate efforts to get down to the red streak there, and one of the old miners told me it was very rich there, and they hoped to get it out for us. It shows they would not have gone to the expense of sinking this shaft which is now named the Cochrane shaft by the miners if they did not think there was gold there. I managed to get a lot of work out of the men, and some of them I had kept in the work, and some of them had more work since I had been there than they had for a long time before. I interested the minds of the men, and I praised them. I never came across men who were more willing to work than they. They want someone to look after them. They do not want someone to tell them what to do and then leave them. If they see you are interested they will be interested too. I was utterly astonished because I expected to see a lot of rough men, but a more civil and well-behaved set of men I never met. Your head mechanics are first-rate men. There has been some good work done by the master carpenter, engineer, and smith. So far as that goes we are in a very good position. When I had the water pumped out I had launders made, and the water carried down to a large tank to supply both boilers of the Randolph and the stamping-house. The stamping-house is very good, and does the master carpenter great credit. We have 20 stamps, and there is room for 10 more, and the engine is powerful enough to work them. If I am not mistaken this 30 head of stamps will be of no use to carry out the work required by the amount of ore which will be taken out. Down to about 150 ft., or 160 ft. it is what they call the brown ore, which is what I have here. There are no sulphates in that. It is all gold. But when you get down below that the water becomes so impregnated with copper that it destroys everything. It will take many years before you can work out this brown ore, and I think that the water from that will be useful afterwards. There was a well opposite Mr. Mooney's which had been used in former times, and I expressed my surprise that they had not used it before. The manager had had a great deal of trouble, and the man he employed turned out very indifferent. I am sorry to say that a man who went before the Court the other day and made a statement that we were in such a state that we were bankrupt, and made a petition to wind-up the company has been one of the causes of the delay. I do not say so, but I am sure I am not alone in saying so. I have had his work properly and had obeyed the manager he would not have been dismissed, because he is a man who is wanted there. He has now brought an action in the Mayor's Court for some debt he says we owe him. All I say is we owe him nothing. During the time I was there I was backed up well. I received 3200£, or 3500£, and since then there has been 1200£ more sent out for we have had to pay for the boilers. I may mention a little circumstance just to show how right I was in appreciating Mr. Holmes. I dare say you have heard of Mr. Baxter who is in a very good position. When I had the water pumped out I had the first instalment of the 1200£ sent in consequence of which I telegraphed out to Mr. Holmes at once to say—"Will you kindly advance the money for the men and pay them." He did so. Of course, he has been repaid. That shows you the style of man he is. It is of great advantage having out there a gentleman as a director, and I hope to propose a resolution to you about that. I trust the shareholders will believe that I am doing the right thing for you—that there should be somebody there who could have a slight control over the manager. If we cannot sign a cheque without two of us and the secretary, and we send out 1200£ of pounds, and then the way one individual may think fit. But if we had a director out there I am sure we should save a great deal of money. I have come to one conclusion—it is quite useless to send machinery out there from England. I went down to Charlotte, and the work turned out there is very reasonable and good. When at Charlotte, I was speaking to a gentleman there about the mint, and he said that is that in consequence of the Gold Hill and the different mines surrounding it, they had put up a mint there. I afterwards saw the professor who is in charge of the mint, and he told me that really as the case, so that although a great quantity has been taken out in a very good position. Below 150 ft. they have a perfectly virgin mine; they could not do anything in consequence of the water. To show what the American opinion is with regard to the property, the New York Mining Record had an article upon each mine going into the hands of English companies, and they were saying how foolish it was to allow their best mines to go out of the country. They further said that "we made this remark on a former occasion when the Gold Hill was sold to an English company." That was their feeling—that this Gold Hill property is a good *bona fide* property—and I assure you I never heard on English doubting for any moment there. I saw many experts. When I first arrived there the Americans were bonding the place all over, and there is a Mr. Newman who sold one bonded property for 448,000, and he has bonded the property from the Dutch Creek about 6 miles from us nearly up to our place. I had many conversations with him. He is a most intelligent man, and understands his business as a mining agent. He has always had the highest opinion of this property. I have been asked what would be likely to be the value of our property if we wanted to sell it. I said I could not say but that there was a little bit of property in the Old Field from which we have taken out a great quantity of gold. I saw a new lot of 120 acres, which was a good piece of gold brought from a piece of land of about 32 acres, and I was asked \$35,000 for it. I was told that they were watching for the success of this company with the hope of realising large sums for those bonded properties. I can only express my astonishment at what I saw. With regard to the burrows, here is a piece of ore which I took out, and which had escaped the tributors who had been in the habit of working the burrows over and over again. I have a piece I took from the Reservoir vein, which is very rich, and when we get to work upon that no doubt it will yield a very large amount of gold. When we got down the bottom of the Old Field shaft we got out a piece which panned 175 oz. per ton. I believe that several pieces could have been got which would have given from 3 to 4 ozs., for when it was panned I was present, and it panned \$100 to the ton. But you have got the average, and a good average I think will satisfy any reasonable person. Some of the people who were not very far from us said there was a quartz vein, and in some instances it yielded an enormous quantity of gold. You may go on for a week or two before you find any more. Old miners used to say they did not believe in quartz; they liked sulphate ore and brown ore, and I have the report from Mr. Treloar. From the evidence of our experts it seems to have a great deal that we should make a fresh company, but why should the company sell the best part of their property. I must say I tried to stop the shares from being allotted. I have had a good deal of experience in my time in mining matters, and when I saw what the property was, and seeing what machinery, &c., was required, I considered there was not sufficient capital subscribed to work it properly with success. I am very glad to say I did not succeed in stopping the allotment and purchase, for I feel that from \$6000 to 10,000, spent upon it will make it a most handsome dividend paying concern. There is some machinery wanted. There are six or seven shafts, and I consider you will want another 40 heads of stamps if you want anything at all. I consider Mr. Holmes has behaved to this company in a most honourable and upright manner. The Chairman then went on to say that half of the money owing on the property ought to be paid off, and estimated that the sum of 15,000£ would be sufficient to do this, and put up sufficient machinery to work at least 100 heads of stamps. Old wood cost \$2 ½ a head, and only two loads a day could be brought, so I bought a new lot of 120 acres, which will give you six or eight days instead of two. Do not think that so large a staff is required. Capt. Treloar met with a bad accident, one of the quartz stamping belts struck him on the head and rendered him quite deaf, and he has sent in his resignation. Mr. Rickard is a very good man, but hardly the sort of man we want. When things are right he would go out again. There

were some very good men out there. He was quite sure that his going out would do great things. The feeling throughout the whole country was that the property is the finest in the country. He was told and he believed it to be true that a man came out from New York, and threatened to shoot anyone who chased the property, and the man got hold of him and nearly killed him. These meetings are always held on Friday, at two o'clock, and he should be very glad to see any of the shareholders who wanted to speak to him.

Mr. HAY: How much will the expenses per ton be?—The CHAIRMAN: I had 120 men working. I can hardly tell you what it will cost per ton: ¼ oz. or per ton will pay well, but I am sure when we get to the Old Fields red ore we shall get at least 1 7/8 oz. per ton.

A SHAREHOLDER: Why not work some of this rich ore in a small way until we have funds?—The CHAIRMAN: It is much better to work the mine vigorously.

Mr. TURNER: How many acres of land do the company now possess?—The CHAIRMAN: About 500 acres more than when we commenced, having bought two forests.

Mr. HAY: There is a process invented to extract the gold by electricity. Mr. FARRICK: Is it the intention to work all these mines together?—The CHAIRMAN: There are only two mines being worked now.

Mr. FARRICK: How long will it be before we get returns?—The CHAIRMAN: I should say there ought to be returns within two months. That is my honest belief.

A SHAREHOLDER: How many stamps are in working order?—The CHAIRMAN: Twenty, and they are in perfect order. I might tell you that we tried the new mode of getting gold by the plates, but we found that the old way of getting gold by the blankets beat the plates by about 20 per cent. There is so much flat gold. I recommended to Mr. Treloar that there should be a fall of water about half-way down the blankets.

A SHAREHOLDER: What would this property fetch?—The CHAIRMAN: I cannot say, but I know that for an adjoining property of 50 acres they were offered 8000£ cash, so you can calculate what ours is worth. We have about 9000 acres, I must say I have great confidence in the board, for I wanted large sums of money, and they have always sent it.

A SHAREHOLDER: Are the funds sufficient to carry on the works?—The CHAIRMAN: A very large sum of money has been sent out—20,000£.

Mr. FARRICK: What amount do you think would be sufficient?—The CHAIRMAN: 15,000£ to clear everything.

Mr. MELANT: Do you use coal?—The CHAIRMAN: No; coal would cost 2½ s. a ton. The boilers are made specially for burning wood.

A SHAREHOLDER: What security have the holders of Preference shares, and how is it that the title to the properties is not good?—The CHAIRMAN: The title is good, only as I told you there is still an amount of 5000£ owing on it.

Mr. MELANT: I beg to propose a vote of thanks to the Chairman for his services to the company, and the information he has given us to-day. The CHAIRMAN, in returning thanks, stated that he was not a rich man, and could not put as much money in the concern as he should like, but his family had invested considerably in it, and he had no doubt would help it along. Taking a general view of the whole undertaking, after my ten weeks' residence on the mines and having taken every opportunity of consulting and conferring with managers and old miners competent to give an opinion, and in conjunction with my own observations, I have come to the conclusion that the company have a most valuable and extensive property, which is on the eve of becoming remunerative, requiring only a sum of (say) from 8000£ to 10,000£ to place it amongst the most successful mines in North Carolina. The proceedings then terminated.

VICTORINE GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the offices, Gresham House, Old Broad-street, on Monday (Mr. ALBERT RICARDO in the chair), to pass resolutions for the voluntary winding-up of the company, the appointment of liquidators, and the approval or otherwise of a draft agreement between the company and its liquidators on the one part, and a proposed new limited company on the other, by which the assets of the old company are to be taken over by the new company, with the view of continuing the working of the company's mines, which are believed to be of very considerable value.

Mr. J. J. TRURAN (the secretary) read the notice calling the meeting.

The CHAIRMAN said—Gentlemen, you are all aware that this company being in difficulties as far as regards more capital to carry on their works, and not being able to meet their obligations in regard chiefly to the interest due on their debentures, the debenture-holders met them some time ago, and appointed a committee amongst themselves. This committee, after some time, recommended a certain scheme by which they would be able to raise the necessary funds and proceed with our enterprise. This scheme was adopted at a meeting of the bondholders a fortnight ago, the principal of it being that 30,000£, which was the sum required to pay off everything and have sufficient working capital, should be raised by a first mortgage, and the debenture holders agreed, on certain conditions, to let that be a first mortgage, and come in priority to their mortgage of 100,000£. The scheme will be read over to you, and I think it will very likely meet with your approval. You are aware the first mortgage bondholders, not having been paid their interest, foreclosed, and really and truly the shareholders would have been wiped out altogether. However, in that scheme they have agreed to let the shareholders have some interest in the property, as you will see by the agreement when it is read to you. We have met here to-day in the first place for the purpose of re-organising ourselves, and to do this the company must be wound-up voluntarily under the provisions of the Companies Acts of 1862 and 1867. That will be the first resolution, and then you will have the draft agreement submitted to you, and liquidators appointed. This will require confirmation by another meeting in a fortnight's time, and after that I am in hopes we shall be able to get on, and be once more, in 1883, in smooth water. I will now ask Mr. Harrison, the solicitor, to read the draft agreement.—Mr. HARRISON, solicitor, read the agreement.

Mr. LYON, who said he was a bondholder and shareholder, said that, as a bondholder, he should not vote for the scheme, which he strongly disapproved of. He denied that it had been approved by all the bondholders.

The CHAIRMAN: If, sir, you had been at the bondholders' meeting then would have been the time to have objected to the scheme as proposed by your own committee, and which the bondholders agreed to, the bondholders having seen that this was the best means of raising money and prosecuting our enterprise. That was agreed to at a meeting of bondholders. After that we had nothing to do but to carry it out legally, and the only way to carry it out was to convert the shareholders' meetings to carry out the wishes of the bondholders themselves. The bondholders met and recommended that the scheme suggested should be carried out with some modifications, and now we call the shareholders together to wind-up and re-organise. Something must be done. The directors have carefully studied the whole thing. Our object is to carry on the concern, and do the best for all.

Mr. LYON: I will give up half my bonds if the other half has the first charge on the mine.

The CHAIRMAN: You give up none. Mr. MACMILLAN said they had two interests to deal with, the debenture-holders and the shareholders. He asked whether the debenture-holders had given their consent in proper and legal form?—The SOLICITOR: The bondholders have passed a resolution approving of the scheme with modifications.

Mr. MACMILLAN: And upon that you have convened this meeting of shareholders to submit the scheme approved by the bondholders. (Hear, hear.) Do not let us mix up this meeting with the debenture-holders, although I hold both debentures and bonds, but let us deal with the questions as they arise. The question is—What is the position of the shareholders? The shareholders have simply to submit to anything which may be submitted to them, consistent with anything like fairness and propriety, in the judgment of the directors and those who investigated the matter. I assume that no better scheme can be proposed as concerns the shareholders? Let us deal with this as shareholders, and see what they propose to do with respect to the proposal now before them. You, as a bondholder, and I also, have rights irrespective of the co-incidence of being shareholders. Do not let us mix the two interests, but deal with them separately. If you can propose anything better than what is shadowed forth in the scheme I shall be glad to hear what you have to say. If it be something better and feasible, I myself and others would be only too happy to support it.

Mr. CRANE: I approve of the scheme, because I do not see that anything better can be done.

Another SHAREHOLDER expressed his disapproval of the scheme. The CHAIRMAN: In a fortnight's time there will be another meeting and then you can either confirm the resolutions or reject them. The bondholders are masters of the situation. They have foreclosed, and therefore, the mine is practically theirs, and their wiping out the shares shows their good feeling towards the shareholders. (Hear, hear.) The scheme, as read here, will be in your hands to consider for another fortnight, either to confirm or reject. I may tell you that there is a petition to wind-up the company, and not a friendly one. If we pass these resolutions to reorganise the company, we shall have taken one step in advance. (Hear, hear.) We have considered it over in the interests of the bondholders and shareholders. We have worked hard to make out a scheme to raise the money. There is good in the mine, I am perfectly satisfied, and we have to do it to pull together in the interests of all. (Hear, hear.) It is for the interests of all that I have been working. I am a large bondholder and shareholder, and it is in the interests of all that this scheme is propounded.

Mr. CRANE: The proposals have been before the shareholders three or four weeks. Previously to that we received copies of the plan, so there can be no complaint with respect to want of time.

Mr. HARRISON mentioned that at the meeting of bondholders the other day, there were 33 gentlemen present, and only one gentleman, holding three bonds, voted against the scheme.

The CHAIRMAN: Well, this is a carefully considered scheme, and I thought we should have no difficulty at this meeting. I am bound to propose the resolutions. I am convinced that if we carry out the scheme we shall put our property in good order. It is easy for a bondholder or shareholder to object, but can anyone propose an alternative scheme? I will now propose the first resolution—"That this company be wound-up voluntarily, under the provision of the Companies Acts, 1862, and 1867."—Mr. JENKINSON seconded the motion.

A short conversation ensued, in the course of which all the gentlemen present, with the exception of two, seemed to be of opinion that the scheme proposed was the fairest and best which could be desired.

In the end the resolution was put and carried with only two dissentients.

On the motion of Mr. JENKINSON, seconded by Mr. MACMILLAN, a resolution was passed appointing Mr. Albert Ricardo, and Mr. Fred George Painter (of Messrs. Tribe, Clarke, and Co.), liquidators.

On the motion of the CHAIRMAN, seconded by Mr. MACMILLAN, the following resolution was passed, with only two dissentients:—"That the draft agreement submitted to this meeting, and expressed to be made between the company and its liquidators of the one part, and a proposed new company, to be established with limited liability, of the other part, be, and the same is, hereby appointed, and that the said liquidators be, and they are, hereby authorised to enter into an agreement with such new company (when incorporated), on the terms of the said draft, and to carry the same into effect."

On the motion of Mr. MACMILLAN, a vote of thanks was passed to the Chairman, for presiding, and the meeting terminated.

GOLD COAST MINING COMPANY.

The adjourned extraordinary general meeting of shareholders was held at the Guildhall Tavern, on Thursday, Capt. MOLESWORTH in the chair.

Mr. JAMES KER (the secretary) read the notice convening the meeting.

The CHAIRMAN: Gentlemen, before we commence the meeting to-day, which is, as you are aware, an adjournment of the extraordinary meeting held on January 25, I may just say that I hope we shall keep entirely to the business in the notice. Therefore, before the meeting commences I wish to tell you that in addition to the 34 ozs. of gold that we have at Liverpool we have just received another telegram to say that we have at Madeira at the present time. Our manager, seeing the great importance of having the proper machinery out there at the present time, is coming home, and we hope he will be home on Wednesday next. He is coming home for the purpose of getting the best machinery we can get to extract the very fine gold, and now that he has had experience we can get a year, he is in a far better position to say what description of machinery will answer the purpose. His brother, who has learned to extract gold, who has extracted gold and sent it home to us, is left out there acting as managing director *pro tem.*, and he informs us that the gravitation stamps are working in first rate order, and hopes to be able to send home consignments of gold every fortnight. (Hear, hear.) Now, about the extraordinary meeting. As you are aware the three solicitors were met, and I may mention that we were perfectly aware that this subject would have cropped up at our last shareholders' meeting. The three solicitors have met, and I believe they have come to a satisfactory agreement, and they propose to compromise the matter between themselves and the vendors. I think the best thing I can do is to leave the vendors to state to you what has been done by the shareholders' solicitor, the vendors' solicitor, and the solicitor to the company.

A SHAREHOLDER asked why no notice had been sent of the meeting to the shareholders. It was by the merest chance he heard of the meeting. The CHAIRMAN: The meeting, as you are aware, was fixed in this room, and to every shareholder of the company a newspaper was sent with the company's seal upon it, and at the bottom of the report in the newspaper it was stated that there was a meeting on this day at the same time and place, and an advertisement was put in as well. We thought it would save expense to let it go out to the shareholders in that form. If we had not put the seal upon it to call attention to it I think the shareholders might complain, but I think if the shareholders got the notice in that way it was quite sufficient.

A SHAREHOLDER said it was perfectly understood by those at the last meeting that the meeting was adjourned until to-day.

Mr. PHILLIPS (solicitor to the company), at the request of the CHAIRMAN, said that they would all remember that at the last meeting the arrangement was that they would all represent a section of the shareholders, Mr. Creswick, and his solicitor, and himself, should meet and consider the various questions which had arisen, the main point being whether the company were in a position to state definitely and claim definitely with a view of proceeding to maintain the claim whether this concern could be claimed by the company as their property. He thought he said at the last meeting that he was personally concerned in what he said, that if a person in a fiduciary position towards a company obtained a concession to the prejudice of his principal that principal was entitled to have that concession without any payment to be made by him other than the out of pocket expenses made by the agent. It was an case to his mind by no means free from doubt, and as a result of the information that had obtained, and after a very long meeting they had a suggestion of a compromise come from Mr. Shea himself as representing the shareholders. He (the speaker) was perfectly unable to pledge the company or the directors, because he might say the directors themselves held very strong opinions about this matter so far as Mr. Creswick was concerned. But he mentioned to the directors that Mr. Shea proposed in connection with the meeting he had better see if he could not do better and this promise. He had succeeded in arranging terms subject to approval for taking over the concession by the company—that they should pay Mr. Creswick in cash £2500, and in full paid up shares of the company 30000. Practically they would pay £2500 altogether. Let the meeting understand that the directors on behalf of the company would take any steps that might be necessary, but he felt when the success of the company was almost attained, if not really attained, that proceedings would be of grave moment indeed. The property was situated many miles from England, and they could not tell what the law out there was any at all. Mr. Creswick had a legal concession, and under all the circumstances he thought the proposition which came from the shareholders' solicitor, and which Mr. Creswick was prepared to accept, was the best thing for the company to accede to. Of that he was perfectly clear. If there were any questions any shareholder desired to ask he should be glad to answer them. The amount which was originally arranged subject to the approval of the shareholders was £10,000, so it would be seen there was a very considerable abatement. A SHAREHOLDER asked whether these shares ranked with those allotted to the public? Mr. PHILLIPS replied that that was the case. The shares proposed to be given to Mr. Creswick were not in any sense deferred shares.

Mr. SHEA said he was acting for a section of shareholders, but not for all. Although substantially he arrived at the same opinion as Mr. Phillips, it was from very different reasons. From his own point of view there was no doubt whatever, and the investigation they had for several hours showed that there was a perfectly clear case, which would demonstrate the principle which had long since been decided in the courts. It had been held in the American courts that an agent could not take advantage of the knowledge acquired in working his company's property, but that if he did purchase certain mining rights, and then subsequently to the company at a large profit whose servant he was at the time of the purchase, the agent could be made to refund to the company any money he had received over and above what he had paid. (Hear, hear.) So that at the time Mr. Creswick made that arrangement with the seven chiefs of Africa he came within the purview of that decision. Therefore, it was clear, as he viewed the law that Mr. Creswick could be made, through the medium of litigation, to pay for everything he had received. They did not elicit from Mr. Creswick what he got it for, but he was informed that it was under 300, that he gave for it. The company should be made aware that this was not the whole of the concession which Mr. Creswick had obtained. He only intended to give this company one-half of it. Mr. Creswick obtained double the amount of land, and out it in halves, and entered into a contract in March, 1881, to sell one-half for 10,000. (Cries of "Shame.") It was for the meeting to say whether they would accept the compromise. It must strike them as very peculiar that the vendor should come down to half the original purchase price. He thought he might say that the result of the course things had taken was due to his intervention at the last meeting. They must judge for themselves whether there was anything in the compromise or not, but if they went to litigation they never knew where they might stop. They might even find the company in liquidation, which was more than litigation. If they had a substantial and valuable property, which he believed they had, it was sometimes necessary to make concessions which were called compromises, to avoid litigation. It was decided at the consultation that Mr. Creswick should think the matter of the compromise over, and say whether he accepted it or not, and he had not heard what he had offered to take less than half his original price. He could not say that his clients had any great and exalted confidence in the manner in which the company had been carried on. (Hear, hear.)

Mr. THORNE said there were two or three matters which were not quite clear to him, and he thought they should have a little more information about them. He had told shareholders who had not sold their shares that they had better stick to them, as they had got a valuable property, and that it only required skill and good management to realise a considerable profit. He had heard that their late manager wanted to sell to the company some property for 10,000. He had heard that he had acquired for the company some property for 1500, and he came with a desire to elicit from the board whether that information was correct. The adjournment of the former meeting had been attended with extraordinary results, as they now found that Mr. Creswick was willing to take less than one-half of the original sum. He wished to know if the solicitor had seen the title of Mr. Creswick to the property, and what was the amount actually paid for it by Mr. Creswick?

Mr. PHILLIPS replied that he had not seen the title, and he did not know the amount that had been paid.

Mr. THORNE said he wished to know if it was a fact that the concession Mr. Creswick was about to sell to the company was only half of what he got for the 2500? The next question he had to ask was a very important one. Was it not a fact that it was originally arranged that some one or more of the directors would have received an interest in, or a commission on, the purchase-money, which Mr. Creswick would have received if the original proposition had been carried through at the last meeting? That was a matter which was known to the solicitor, or it was not.

Mr. PHILLIPS said he understood there was an arrangement whereby a director would receive a heavy commission upon the purchase money, but he ought to explain that at the very moment his position was pointed out to him, and how absolutely absurd it was of him to expect that at the expense of the company he could make a farthing, he immediately withdrew from his position.

A SHAREHOLDER: The position of director?

Mr. PHILLIPS said no; but from the position he occupied as to obtaining a commission on the sale of the property.

Mr. THORNE said he apprehended that if the resolution had been carried at the last meeting, who was a director of the company, that gentlemen would have walked away with a heavy commission. Mr. PHILLIPS could not answer that.

Mr. THORNE: Who was that gentleman?—Mr. PHILLIPS replied that he could not give it.

The CHAIRMAN said there was no question which, if asked, he should not be happy to answer, and he would explain, if necessary the whole course the directors had taken. The fact of the matter was that Mr. Irvine was the gentleman; but he (the Chairman) did not agree that had the resolution been carried at the last meeting he would have received his commission.

Mr. THORNE said, if it was a fact, as he believed it was, that Mr. Irvine was acting as agent between Mr. Creswick, who at that time was in Africa, and the board, they had taken this position, that one of the directors who was entrusted with the interests of the company was acting really as negotiator for himself as well as for Mr. Creswick. He did not like lawsuits. They did more harm than good to everyone concerned except the legal advisers. He thought, considering the fact that they had withdrawn so much information which had been withheld from them, they should adjourn the consideration of this purchase for a month in order to look into the whole matter. There were several shareholders who had a large stake in the concern, and he thought a committee of investigation of those gentlemen should be formed to enquire into the whole affairs of the company.

Mr. JOHNS said he did not share in the want of confidence in the board of gentlemen who had just spoken. He did not know one member of the board, but he thought they had conducted the affairs of the company very well up to the present time. He was engaged in the interesting speculation of gold on the West Coast of Africa, and under their agreements with their managers they were to do nothing except for the interest of the company. (Several shareholders: That is in our.) The proposition which had been made to buy anything from Mr. Creswick was more monstrous still. To think that a gentleman should go out there in the pay of the company,

and buy a piece of property near to them, and should develop it out of his own pocket seemed ridiculous. He had no doubt that the real *modus operandi* was that the company's men and their tools and their everything explored the property adjoining theirs. When an Englishman went out to Africa he seemed to forget all his honour and pledged to the company, which were thrown to the winds. He deprecated constant meetings, and also committee of investigation. He thought the best plan would be to tell Mr. Creswick to take his property, and go away with it, and let the company hear no more from him.

Mr. CRESWICK said his acts had been perfectly pure throughout. (Laughter.) When he was asked to go out he told the then secretary of the company that he would not go unless he was perfectly free to take concessions, and that was fully understood. The agreement did not forbid him to take concessions. He went out for 3000, a year, which he should not have done if he had not been at liberty to take concessions.

The CHAIRMAN said that a few words from him might stop a long discussion. The first information the directors got of the property was its being offered in London for sale. The next thing they heard was that there was an offer of 75,000 for it in France. It must not be supposed that the directors agreed to what Mr. Creswick had done; on the contrary, they had been opposed to it. (Hear, hear.) They considered they had a moral claim to the property. The question was to get hold of the property and to prevent it being sold to other parties. The board decided to go to the shareholders about it, but to secure it in the meantime they paid a deposit of 2500. If the shareholders did not like it they had a guarantee to say they would get their 2500 back. The board had done nothing further, and they had not gone into the question of title yet, because they were not purchasers. They could not be purchasers until they got the consent of the shareholders, and until the board got their consent they could not go into the title, because the deeds were with an independent lawyer as between the vendors and the company. All the board had done was to chain the property to the company in case it was decided that they should have it. The board had private information from the Gold Coast and from their manager out there that this property was most valuable, and was essential for the working of their own property. The board had taken possession of it. He maintained the directors had no other way of securing the property than by entering into the provisional agreement they had. Mr. Creswick by his act had certainly shaken the confidence of the directors in him, and they and Mr. Creswick had since separated. For his (the Chairman's) own part, he was totally opposed to the transaction from beginning to end, and as Mr. Irvine's name had now been mentioned, he might say that he had written to him the strongest possible letters as to the position he had placed himself in, but he believed he did so ignorantly. (Laughter.)

At the request of the meeting the SECRETARY here read the agreement between the board and Mr. Creswick.

Mr. MONTEFIORE thought the very act of the board in calling upon the shareholders to sanction the purchase was a sanction to Mr. Creswick that he had the power of selling the property. He quite agreed that it was better to compromise the matter than to go to any litigation about it, but if they purchased the property they should purchase the whole, and not half of it. The whole of it might be very valuable, but half of it might be worthless. On the whole, he thought they had better leave it alone altogether, and let Mr. Creswick have the property.

The CHAIRMAN replied that as to a committee of enquiry any shareholders who wished it could go to the office, and every information would be given them.

Some further discussion then took place, during which one SHAREHOLDER moved that the company do not pay Mr. Creswick a farthing, but that they keep possession of the property, and let him turn them out if he could. (Hear, hear.)

Some amendments were proposed, but neither the resolution nor the amendments were put to the meeting, and in the end the following resolution, proposed by Mr. Shea, was agreed to unanimously:—"That this meeting stand adjourned till this day fortnight, at the same time and place, and that the company's solicitors be and are hereby instructed, in the event of the meeting not being able to obtain from Mr. Creswick's solicitors an undertaking forthwith not to in any way deal with the whole or any part of the entire concession without 24 hours' previous notice in writing to the company's solicitor, to take such steps as they may be advised, in order to protect the company's interests." It was decided that the expenses of the shareholders who had brought Mr. Shea to the meeting should be paid by the company, in consideration of the services so rendered by them.

A vote of thanks to the Chairman closed the proceedings.

FARYS COPPER CORPORATION.

An extraordinary general meeting of shareholders was held at the office, Finsbury Circus, on Monday, Mr. J. Y. WATSON in the chair.

Mr. FELIX F. WILSON (the secretary) read the notice convening the meeting.

The CHAIRMAN stated that the primary object of the meeting was to receive applications for 3000 shares, because, without they were taken up the directors could not oppose the action of the lords, and might lose the mine. There were, he said, 430 shareholders in the company, and if they had taken only seven each it would have made up the number; but only 37 applications had been received, amounting, in the aggregate (including the 400 he had himself agreed to take) to about 1500 shares. Under these circumstances, therefore, he thought it would be best to pass the resolution authorising the issue of the shares at 10s.; and as a meeting would be necessary to confirm this resolution, he again urged upon the shareholders the necessity for the balance of the shares being subscribed before this extraordinary meeting was held, and give notice that unless they were an extraordinary meeting would be proposed at that meeting to wind up the company, and appoint liquidators to make the best terms they could with the lords. If, prior to that meeting the shareholders who had not responded would come forward and make up the 3000 shares the resolution would not be proceeded with; and he had reason to suppose that if this capital was subscribed, so as to enable the directors to do more work in developing the mine, favourable terms might possibly be made with the lords.

It was then proposed by the CHAIRMAN, seconded by Mr. F. BRADY, and carried unanimously, "That it being essential in the interests of the company that some additional capital be forthwith raised in cash, the directors are hereby expressly authorised to issue all or any of the 7687 shares now unallotted at such discount not exceeding a discount of 50 per cent. or 10s. per share, as they shall determine."

It was also decided to carry out the proposed plan of the Chairman.

THE YEOLAND CONSOLS.

The first ordinary general meeting of shareholders was held on Monday at the offices of the auditors, Gresham-street, Mr. H. W. RIPLEY in the chair.

Mr. EDWARD A. RICH (the secretary), read the notice convening the meeting, and the report of the directors was taken as read.

The CHAIRMAN said that doubtless the report had been received with some regret by the shareholders, and the directors could coincide with those feelings because when he last had the pleasure of addressing the shareholders it was thought that at this meeting they would have been in a position to declare a dividend. Unfortunately, as they would see by the report, some of their largest shareholders when the call was made were unable to respond to it. Some of them had got into other difficulties with mines, and others were connected with the Union Generale de Paris, and consequently, although they asked for time, they were unable, even at the deferred period, to come forward with the necessary amount, and, therefore, their shares had to be forfeited. This naturally entailed a very great amount of difficulty and trouble on the directors, because after the last meeting was dissolved last year they entered upon contracts for the completion and carrying out of the works at the mine, and also they had to find the necessary cash to pay the contractors. Of course, the amount at their command was very small, and that was soon exhausted. The vendors communicated with the directors, and asked for a meeting to see whether something could be arranged. They felt so certain they held property, which, if they could obtain the necessary funds, would turn out for the benefit of all concerned; that they were pleased when the vendors came to confer with them to see what could be done. As they would see by the report the directors and the vendors jointly were enabled to get their immediate friends to come forward and take the necessary amount of shares, to enable them to settle with the vendors with the exception of one amount mentioned in the balance-sheet of 10000, which they were advised at the time should be retained in their hands. Since this time became the property of the company the directors had certainly had from time to time very anxious meetings, because the cost-sheets came up month by month, the contractors asked for the amount of their funds was very small. He must say that the shareholders owed a debt of gratitude to their solicitor, Mr. Powys, who advanced money from time to time, and had it not been for that he was very much afraid they should have had to call the shareholders together to ask their advice as to what they should do. He trusted now that they were in smoother water. They obtained a small mortgage which enabled them to pay all their present liabilities, and they were at present very nearly completing another small loan which would give them sufficient funds to put the machinery in complete working order. He had paid a personal visit to the mine, and delayed his visit as late as possible before this meeting. He spent the whole of Saturday with one of his colleagues going over the property, and they were specially pleased with what they saw. Captain Manley accompanied them, and any question they put he was only too ready to answer. They saw the various buildings to which allusion was made in the report, and he was confident in stating that no building could be put up in a more substantial manner. After that at Capt. Manley's suggestion they went through the deep adit, not a very nice work, as they had to wade through water nearly the whole of the time, but it showed them exactly what the mine was composed of, and he was convinced from the knowledge he obtained where the tin was and where they might expect very little, and he must say that he never was more pleased than with the appearance of the deep adit. It led him to believe that they had a very valuable property indeed.

With regard to the working of this mine they had two very great and very important points to consider because they involved a vast amount of saving in expense. There was no machinery required for haulage, and more than that there was very little timbering required in driving the adit. Comparatively speaking there was none required at all. They saw the excavations for the wheel, and that, of course, at the present time was in *status quo*. After that they crossed the river and then they inspected the last which they went over from beginning to end, and he must say as far as it was completed it was most satisfactory. He should say at least two-thirds of it was finished. There was one part they had to complete through the wood, and also at the end where they had to take their water, and there they would have to erect a bridge over the road; but all the heavy part of the work was done, and now it required but a very small outlay of money to bring their mine to working order. They had a very large quantity of tinstuff, some 1200 to 1500 tons outside the mine ready to be crushed directly they got their machinery up. They thought it far better to wait until they had the permanent machinery, and they had been enabled through the assistance of Mr. Lambert to purchase machinery sufficient to commence working. The engine was at the station, and Captain Manley was expecting the stamps. He thought that when the machinery was erected in a month or six

weeks he could put the thing in working order. He (the Chairman) felt confident that they possessed a property they might be proud of, and they were very nearly in smooth water. There was one item he should like to refer to, and that was as regarded directors' fees. That was put down as a debit, but that amount they proposed after this meeting to carry to a suspense account, and until the company was in the position of having made some good return to the shareholders the directors did not propose to avail themselves of that amount. They would have the report of the company's captain read, and that would give them even a better account of the mine than he had been able to give because he was only an amateur and the captain was a professional. He moved the adoption of the report.—Mr. BENNETT seconded the motion, which was carried unanimously.

The report of the captain having been read, the retiring directors and auditors were re-elected, and Mr. Lightfoot was appointed to a seat at the board.

A vote of thanks to the Chairman and directors terminated the proceedings.

GLASGOW CARADON.—At the meeting in Glasgow on Monday (Mr. Archibald Arrol in the chair), the report and accounts were adopted. The Chairman stated that the company was now in a more favourable state than it was at this time last year. By the development of the mine and the opening up of lodes, they were in a position to extract more ore than formerly, and he was glad to say that matters were continuing in a good condition, and there seemed a reasonable prospect of their remaining so. The only drawback was the low price of copper. The mine was situated at lower depths, and as it deepened its productiveness and the quality of the ore improved. The weekly reports had been getting better of late, the one received that morning being of a very favourable character. A communication had been made by wire from 102 to 114 level, which gave good ventilation and stopping ground. Everything, in fact, pointed to the circumstance that the prospects were brightening, and that they would occupy their old position of being a dividend-paying company so soon as the market improved. The mine was being carefully wrought, and the engineer was going on developing as well as extracting ore, so that it would be found when the time came that they had a very large reserve indeed. Upon the proposition of Mr. W. E. Smith, seconded by Mr. T. L. Paterson, 1000, was voted to the directors for their services during 1882.

WATSON BROTHERS' MINING CIRCULAR

WATSON BROTHERS,

1, ST MICHAEL'S ALLEY, CORNHILL, LONDON.

The difference in price referred to by a "Novice" is owing to the presence of silver. In ordinary lead ore there is no silver, and it fetches 8s. to 9s. per ton, according to the percentage of lead. Galena, or the sulphuret of lead, is supposed to consist of lead, 85, sulphur, 13. Silver-lead sells according to the number of ounces of silver it contains, and this has varied from 20, 4, and up to 70 ozs. per ton in Cornwall. The old Garra Mine yielded 70 ozs. The richest we think, however, was at Old Treburget, where the specimens were very fine indeed, and the bulk rich for silver. Lead and blende (sulphuret of zinc) are sometimes very much alike, but if you scratch a specimen of lead with a knife its lustre remains, while if you scratch a piece of blende in the same way its lustre is destroyed.

D'Eresby Mountain sold 200 tons of lead last year, and at the old price of 12s. to 13s. per ton this might have left a profit, but it was sold at 8s. 5s. to 9s. 5s. per ton, which makes all the difference.

If all we hear be true the lords of some mines are doing their best to kill the geese that lay golden eggs for them, if not for the shareholders. We referred a short time ago to the arbitrary and harsh proceedings of the lords of a mine in Wales. The shareholders had spent 40,000, without any benefit to themselves, but had paid 4000, rent to the lords for land that for any other purpose than mining was not worth 6d. an acre. We now hear it reported that the lord of Dolcoath, the oldest, deepest, and richest tin mine in Cornwall, is about to demand a heavy fine (estimated from 30,000, to 50,000,) for a new lease. The present lease has five years to run, and rather than submit to such a fine the shareholders may think it best to work out the mine as fast as they can. To pay it would involve a call of 10s. or 15s. per share. The mines must have paid the lords at least 100,000, and is at present paying 9000, a year royalty for land described as "barren wastrel," that would pay 1s. per acre for agricultural purposes. Add to this that probably the shareholders have also been charged 1000, an acre for land covered by debris or "destroyed."

We hear since the above was written that the terms demanded by Mr. Basset are 40,000, to be paid out of future profits, at the rate of one-quarter of the profit per year; the shareholders are also to sink a new shaft from surface, which will be a costly affair. At present the shareholders seem to be divided in opinion, one party would try and come to terms, the other, and by far, it is said, the most numerous, would work the mine out, and leave it a wreck at the end of the lease, but this would ruin the district.

A correspondent sends us the following queries:—

LIMITED LIABILITY.—Do these words mean—(A) That your individual loss, in the event of the said company failing, cannot exceed the amount of your own individual share—or

(B) In a wide sense that the company can demand and make calls to the amount of all the shares which have been allotted taken as a whole—i.e., that of one or more shareholders are unable to answer the call made upon them, that deficit to the company can be made up by their being able to demand more proportionately from the remaining shareholders?

The answer is very simple. An individual shareholder is only liable for his individual shares. If A buys 100 l. shares in a limited liability company fully paid up, no further liability can attach to him. If he takes 100 l. shares in a limited company only partially paid up he is liable for the balance: thus if there is 10s. per share paid up he is liable for 10s. more.

From Mr. JOHN B. REYNOLDS:—The celebrated Dolcoath disclosure has been the all-absorbing topic of conversation this week in mining circles. The committee, however, have, strangely enough, abstained from taking shareholders into their confidence, and we presume that they will not do so until the meeting on Tuesday next. It would be premature to blame them for their reticence, as we do not know their reasons for the course of conduct which they adopt; but as far as the public have been enlightened, this appears to be on the part of the lord the most flagrant act of injustice ever perpetrated by anyone connected with Cornish mining. The shareholders in the leading mine of England should have a heavy fine imposed upon them on the renewal of a lease is a matter of such grave import that it ought to rouse the indignation of every shareholder in Cornish mines. We have for some time been of opinion that every sort of obstacle, and that, too, from every quarter, has been placed in the way of shareholders; and we have wondered how companies have tamely submitted to various impositions laid on them. But the attempt on the part of the lord of Dolcoath Manor is a feature altogether new, and we can only hope that the cry of indignation will be raised from one end of Cornwall to the other.

There are many things which can legally be done, but which we may well hesitate to carry out if we have a shred of respectability left. There is still time for reflection, and we can only hope that the Dolcoath Committee will make the best of it by pressing home counsels of prudence to one who must now, we are sorry to say, be considered as their antagonist. Should the worst come to the worst, we hope that the Dolcoath shareholders will resolutely decline to submit to the fine, and that during the five years yet remaining to them they will act in accordance with the evident interests of the company. Dolcoath shares had a continuous drop up to Wednesday evening. On Thursday, however, they rallied, and they leave off with an improving tendency. Shareholders, of course, will do well not to sell at panic prices.

West Kittys have suffered from one of those scares which are very common in a market such as we have had this week. At one time it was really believed that the price was not much better than 2s., but this belief brought in many buyers, who, without doing their business, ran the shares quickly to 10s. Very few have changed hands, and the price is exceptionally firm.

New Kittys have also been asked for, and we may well pause to enquire why these shares have been so depressed. It cannot surely be known that in Thomas's shaft they are working on what is believed to be West Kittys lode, in a capital piece of ground. We know of but few shares more difficult to obtain than these, and if holders are firm, outsiders, who are at present watching, will find it impossible to get in.

Revanance shares have been very largely bought. It is quite clear that the demand for these promises to be as considerable as to run the price to a very high figure. It is currently reported, and believed in the best informed circles, that the property at the market price is second to none on the list. We express no opinion on the subject ourselves, but we leave the matter to those who are very much better guides in mining business than we can ever pretend to be. We cannot help saying, however, that every particle of evidence submitted to us fully bears out the most sanguine estimate which we have ever seen. Excepting West Polbreten, Tolima, and one or two others, the markets have been devoid of interest, because many of the prominent mines have the lord of Dolcoath as their freshholder, and the public wisely decline to buy the shares in such mines on any terms until the Dolcoath shareholders know exactly where they are. It may be satisfactory to those interested in the St. Agnes district to know in such a critical period as this that nothing can be better than their title-deeds; and that there is not the slightest chance of their ever having the troubles which are now causing the Dolcoath shareholders such grave anxiety.

The SUBSCRIPTION LIST WILL CLOSE on TUESDAY, the 13th February, for LONDON and the COUNTRY.

The Barancannes Copper Mining Company (Limited).

Incorporated under the Companies Acts, 1862-1880.

CAPITAL £120,000, DIVIDED INTO 120,000 SHARES OF £1 EACH.

ISSUE OF 120,000 SHARES,

Of which 40,000 are issued as fully paid to the Vendor in part payment of the property; the balance—80,000 being now offered for Subscription.
Payable—5s. per Share on application; 5s. on allotment; 10s. one month after allotment. Interest at the rate of 5 per cent. per annum will be allowed for payments made in full on application in anticipation of calls.

DIRECTORS.

E. A. PONTIFEX, Esq., Chairman Cape Copper Mining Company (Limited)—CHAIRMAN.
The Lord RICHARD BROWNE, Director Corporation of South Australian Copper Mines (Limited).
JOHN HARVEY, Esq., Chairman Chile Gold Mining Company (Limited).
W. FRASER RAE, Esq., Chairman Lake Superior Native Copper Mining Company (Limited).
FRANCIS DAVID WEBB, Esq., 18, Victoria Square, London, S.W.
BANKERS—BARNETTS, HOARES, HANBURY, and LLOYD, 60 and 62, Lombard Street, E.C.
AUDITORS—Messrs. SPAIN BROTHERS and COMPANY, 76, Coleman Street, E.C.
SOLICITORS—Messrs. PAINES, LAYTON, and POLLOCK, 47, Gresham House, E.C.
SECRETARY (pro. tem.)—A. G. MOORE, Esq.
TEMPORARY OFFICES—149, GRESHAM HOUSE, OLD BROAD STREET, E.C.

PROSPECTUS.

This company has been formed for the purpose of purchasing and working the Barancannes Mine, situated in Portugal, about 17½ miles from the railway station of Carregueira (on the railway to Lisbon), there being a cart-road thence to the mine, which can be reached within five days of leaving England. The concession extends over an area which is 1000 metres long and 500 metres wide, and the lode is reported to extend through the entire length of the concession (about 1093 yards), and to be highly mineralised throughout.

The property has been very carefully surveyed and reported upon both by Capt. Clemes, who was for five years manager and chief mining agent of the Cape Copper Mining Company at their celebrated mines in South Africa, and has had a large and varied experience of copper mining in other parts of the world, and by Señor Pagés, mining engineer, of Madrid. Capt. Clemes was specially selected for this purpose by the directors (he having been long personally known to the Chairman of the company, who has every confidence in his judgment and integrity), in order that they might be furnished with a perfectly independent report of the property, and also that the accuracy of the statements in Señor Pagés' report might be tested.

The reports of these mining experts substantially agree, and lead to the conclusion that this property presents solid promises of success, as well in the quantity, richness, and enduring character of the deposit (which is stated to widen and become richer as it gets deeper), as in the facility with, and the low cost at which, the ore can be raised, and also in the favourable position of the mine in respect of its accessibility and the comparative cheapness of transport. The ore is reported to be exceptionally pure, and the rock soft and easily amenable to treatment.

The mine has already been developed to a considerable extent, and Captain Clemes states that at least 300 tons of ore per month, averaging 20 per cent. of copper, can be at once raised, so soon as the machinery necessary to treat this quantity of ore is erected. Estimates of the cost of the machinery have been obtained from the Sandycroft Foundry Company, which show that it can be purchased for about £2500, and the directors estimate that its total cost, including its erection, and that of the necessary buildings, will not exceed £5000.

It is calculated that the erection of the dressing machinery can be completed in about three months, when the output from the mine can be at once economically dealt with; but in the meantime the 600 tons of ore, which, as will be seen, are already on hand, can be hand-picked, and the bulk of the produce sent to market, the sale of which will serve to increase the amount of working capital hand.

In estimating the working capital necessary to be provided, allowance must be made for the cost of the mining operations (including sinking a new shaft) carried on during the time which will elapse before the new machinery is in thorough working order, and Captain Clemes considers £1200 ample for the purpose. When the new machinery is in full work, he estimates that the monthly cost-sheet will not exceed £300 for 3400 tons of ore.

It is considered necessary to provide for three months' revenue charges, and assuming that they amount, as above, to £900 per month (including cost of carriage to the shipping port), this will involve an outlay of, say, £2700, which, with the £1200 before referred to, will make a total of £3900 required as floating capital. Adding to this the £5000 for the erection of the plant, machinery, &c., it follows that £8200 is the sum required as working capital, in order to raise, treat, and ship 300 tons of ore per month, but the present issue allows £20,000 for that purpose.

The samples of ore which Captain Clemes took from the bottom of the lowest level, and which he states to be a fair average sample of the deposit, is reported, by Messrs. Johnson and Matthey, to contain 25 per cent. of copper; and a sample taken by him from the ores now on the surface, as fairly representing the bulk, contained 29.5 per cent. Other samples sent by Señor Pagés have been assayed and examined by Mr. Napier, formerly of the Concoridia Copper Mines, South Africa, and now the head of Messrs. Pontifex and Wood's Metallurgical Works, whose report accompanies this prospectus.

Mr. Napier writes—"From the nature of the ore, there would be no difficulty in dressing it up to nearly 30 per cent.; in fact, if the sample sent represents anything like the bulk likely to be obtained from the mine, hand-picking would be all that would be required to separate the richer from the poorer ore, and the poorer portions could be easily concentrated. On the whole these ores would smelt splendidly, and as they contain no impurity they would, I think, make splendid copper."

The mine has already been to a great extent opened out, and the reserves uncovered are computed by Señor Pagés at 3728 metrical tons, and by Captain Clemes at 3500 Cornish tons of 21 cwt., while there is a quantity of ore taken out from the mine, ready for treatment, estimated by Señor Pagés at 778 metrical tons, and by Captain Clemes at 800 tons of 21 cwt. These calculations were made quite independently of one another and upon different occasions.

Estimating the ore at only 20 per cent. copper, and at £11 per ton, the total value of the ore in sight, on which the chief mining costs have already been incurred, would be:—

4200 tons at £11=£46,200.

In addition to this, Señor Pagés reports that the estimated quantity of ore in sight, in his opinion, only represents one-tenth of the quantity which can be extracted from the same lode to a depth of 50 metres. This, at £10 per ton, would represent ore to the additional value of £400,00, without taking into account the value of the ore which may be found at the greater depth, where, according to Captain Clemes, the lode will be of a greater width, and the ore of a richer quality.

But, assuming that the future raisings are not increased beyond the 300 tons already spoken of, and taking the ore at only 20 per cent., the monthly profit, after allowing for the extra cost of mining, should reach £3000, making a total annual revenue of £36,000, which would give a return of 30 per cent. upon the nominal capital. This profit would be very largely increased if the calculations were based upon Señor Pagés' estimates of the richness of the mine at its greater depths, where he reports the ore to contain from 35 to 40 per cent. of copper.

It is proposed to pay the sum of £100,000 for the mine, including the stock of 600 tons of ore already raised. Of this sum the vendor will take £40,000 in fully paid shares, being one-third of the total capital of the company, which is the largest proportion allowed by the Stock Exchange. The vendor pays all preliminary expenses of the company up to allotment and brokerage.

The only agreements entered into by the company, or the promoters, directors, or trustees thereof, are the following:—

An agreement dated the 7th of December, 1882, between Julius Beerholm and C. S. Champion Crespiigny, Esq., and
An agreement dated the 3rd day of February, 1883, between C. S. Champion Crespiigny, Esq., and E. A. Pontifex, Esq., on behalf of the company.

These agreements, together with the original reports of Señor Pagés and Captain Clemes, and copies of the Articles of Association, can be seen by any intending subscriber at the offices of the solicitors to the company.

In the event of no allotment being made, the deposit paid on application in shares will be returned in full; should the shares allotted to any applicant be less than the number applied for, the surplus paid on application will be credited in reduction of the amount payable on allotment.

Prospectuses and Forms of Application for shares can be obtained at the offices of the company, and from the bankers and auditors.

Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES—No. CCIX.*

BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,

Mining Engineer, Wakefield.

(Formerly Student at the Royal Bergakademie, Clausthal.)

[The Author reserves the right of reproduction.]

LOADING AND UNLOADING MULTIPLE DECK CAGES.

We shall now consider the case where the cage has three decks, changing of the corves from all of which takes place at one time. In both sides of the shaft raised platforms are fixed, each having two raised floors corresponding to the heights of the top and middle decks of the cage. The arrangements being similar at the surface and the bottom, our description will be made with reference to the latter. The cage with empty corves having arrived at the pit bottom, the latter are pushed out on to the corresponding platforms at one side, whilst the full corves from the opposite side are pushed into the cage. Whilst the full cage is being raised the empty ones are lowered from the fixed platforms by a movable platform on the outer side, and full corves are raised by a similar movable platform on to the fixed platforms on the opposite side. The fixed and movable platforms are of such a width as to serve the two cages, or two movable platforms of half that width may be used in place of one. With this arrangement all the full corves may be arranged to come to the pit bottom on one side, and the empty corves sent off on the opposite side; or the full corves and the empty corves may be arranged to come to and be sent away from one or the other side of the shaft indiscriminately. The above arrangement requires the least time for stopping the cage at the pit bottom, but requires a duplicate arrangement of fixed and movable platforms. By making the fixed platforms so large as to allow standing room for a full corf whilst the empty one is being withdrawn from the cage, and also for the empty one whilst the full one is being pushed on to the cage to replace it, the above arrangements are required on one side of the shaft only. With a movable platform of the double width (i.e., twice the width of one cage) the empty corves may be lowered from the fixed platforms and full ones raised by once lowering and raising the movable platform. The movable platform is connected by a rope passing over a pulley to a counter weight which is sufficient to raise the platform with two empty corves, but which is itself raised when the platform is loaded with one full corf. The above arrangement has the disadvantage that the men changing the corves from the lowest and middle decks must work in very stooping cramped positions. This may be obviated either by making the height between two decks much greater than that required for a loaded corf, or the middle fixed platform is arranged on the opposite side with a corresponding movable platform. When this is the case the operations are the same as described in the last paragraph No. 208.

WHEN THE CAGE HAS FOUR DECKS.

We shall first assume, as is always advisable, that the cage at the pit bottom remains stationary the whole time during the changing of the corves. The cage at the top, however, can be then unloaded from each deck successively, or from two, or as we are about to describe from all decks simultaneously. The simplest method is to provide a double arrangement at both sides of the pit bottom of four different levels, three of which may be fixed platforms so that the full corves are pushed out from one side by the empty corves being pushed in on the opposite side, and the loading and unloading takes place from all four decks simultaneously. This arrangement is undesirable, owing to the cramped position in which the men must work, who are changing the corves from the three lowest decks, or the height of the cage must be excessive. This disadvantage may be avoided by providing only two platforms on each side of the cage,

those on one side being level with the rails in the first and third decks, whilst those on the opposite side are level with the rails in the second and fourth decks. The changing of the corves can thus take place simultaneously from all four decks. A movable platform is provided on each side of the pit to raise and lower the corves from one level to the other. A similar arrangement may be provided at the top. It will generally be found inconvenient to have four different levels at the pit bank, and it is, therefore, advisable to have only two different levels and change the corves from two decks at a time, especially as the disadvantages of moving the cage at the pit bottom do not apply at the pit bank.

In the following description each deck is supposed to contain only one corf. The road for one set of wagons to the pit bottom is (close to the pit bottom) placed at a height above a second inclined road equal to twice the height of one deck, so that in the stationary position of the cage the rails of the first road are level with the rails in the top deck, and the rails of the second inclined road level with the rails in the third deck (counting from the top). Between the road rails and the cage is a movable double-decked platform, the height between the decks being twice that of the cage decks. A rope from which the movable platform is suspended passes over a pulley, and is provided with a counter weight at the opposite end. The platform is of such a length as to hold two corves placed end to end. A separate platform is provided for each cage. Between the platform and the cage are provided bearers on a level with each deck of the cage, supporting short fixed connecting lengths of rails. When the cage arrives at the pit bottom, and the platform also is in its lowest position, the empty corves in the second and fourth decks (counting from the top) are withdrawn on to the platform, which is then raised the height of one deck, when the empty corves in the first and third decks are drawn on to the platform. The rails of both decks of the platform now being level with the rails of the roadways, the empty corves on the platform are withdrawn on to the roadways whilst full corves are pushed into their places, and one from each deck of the platform on to the first and third decks of the cage respectively. The platform is then lowered, and the two remaining full corves are pushed on to the second and fourth decks of the cage respectively.

In the following arrangements the cage at the pit bottom rests directly on a movable platform, so that the cage can be lowered independently of the winding-engine. The rails on each side of the pit bottom are not level with each other, but (when the movable platform just referred to is at its highest position) these rails are level with the rails of the bottom and third decks of the cage respectively. When the empty corves have been withdrawn and replaced by full ones, the movable platform and cage are lowered a distance equal to the height of two decks. The corves in the second and first decks are then changed. In this last arrangement the rails on one side of the cage may be at a height equal to two decks above the rails on the opposite side of the cage. The corves in the first and third decks are then changed simultaneously, likewise those in the second and fourth decks. This arrangement may be doubled so that the empty corves may be withdrawn on one side whilst the full ones are pushed in from the opposite side. The movable platforms to connect the different levels on each side of the pit bottom may conveniently be placed at some distance from the shaft.

WINDING-ENGINES.

The general arrangement for winding consists in a double cylinder engine with two drums on the same shaft. From these drums two ropes (one from the underside of one drum and the other from the upper side of the second drum) pass over two pulleys fixed at some height above the mouth of the shaft. These ropes move so that one is raising the cage with the loaded corves whilst the other is lowering the cage with the empty corves. The work of raising one rope and cage is thus counter balanced by the descent of the second rope and cage. The balance of work to be done by the engine is the raising of the load of mineral. On the speed at which this load is to be raised, and the amount of the load will depend upon the useful work required to be performed by the engine. The velocity of

winding varies from 10 ft. to 25 ft. per second as the average over the whole depth raised, but is much less during the commencement and end, and much greater during the middle portion of the winding. The two ropes, however, only balance each other in the middle of the winding, the engine having the full weight of one rope to raise at the commencement of the stroke, and at the end of the stroke has the same weight assisting it. This weight is in many cases so great that the valve motion is reversed towards the end of the stroke to admit steam to the back side of the piston. It will thus be seen that the engine has to work against a very varying resistance, and that the deeper the shaft the greater is the variation. On this account all large winding-engines are high pressure engines working with expansion. In designing the engines the calculations should be based upon the complete load to be raised (mineral, corf, cage, and rope) and the rate of acceleration of the velocity of ascent, and with regard to the engine considered as working at high pressure without cut off. The ratio of expansion should be gradually increased, but the cut off never carried beyond that at which such engines work economically. For shallow mines the engines may be designed to work during the whole of the winding expansively. We have just mentioned that, especially in the case of deep shafts, the engines should not only work expansively, but that the ordinary link motion should vary during the winding. With the ordinary link motion this is very often effected by the engineer moving the reversing lever gradually forward, but the most modern and best designed engines have automatic expansion. The calculations for winding-engines and the description of the various arrangements and valve gear is separately treated in the lectures on engineering, and we therefore pass on to other details of the winding arrangements.

WINDING-DRUMS.

The first consideration in fixing on the diameter of the winding drums, and also on the diameter of the pulleys in the head gear, is that the bending and unbending of the rope which is thereby caused shall not be so great as to injure the rope. The diameter usually varies between 10 ft. for shallow pits to 28 ft. for very deep shafts. The width of the drum follows from the depth of the shaft, the diameter of the drum, and the number of times that the rope is wound upon itself. To reduce the latter the diameter of the drum should be large. When the drum is wound upon itself it suffers considerably at the point where the first coil of a second row mounts on the last coil of the first row. It is not advisable to have the drum very wide on account of the great divergence (when the rope is at the outer side) of the direction of the rope from the plane of the pulley in the head gear. To reduce this divergence it is advisable not to place the two winding pulleys parallel (i.e. the plane of the pulleys at right angles to the axis of the drum), but to place each pulley so that its plane intersects the corresponding drum in the centre of the surface of the drum where the rope leaves the drum.

The various parts of the drum which may be specially considered are the nave, the arms, the rim, and the lagging or cylindrical surface on which the rope is wound. For small sizes the three first may be cast in one piece for each side of the drum. The arms should be of a T, H, or + section, tapering (except in thickness) down towards the rim. The section of the rim is very various, and of this will depend the mode of fastening the lagging. The simplest and one of the most general modes is to cast a cylindrical rib on the inner side, and to fasten the lagging boards down to this with bolts. The rim should project so much beyond the cylindrical surface of the drum as to avoid any liability of the rope slipping sideways off the drum. Another common method is to cast a groove on the inner side of the side plates of the drum of a width equal to the thickness of the lagging boards. The best construction, perhaps, is to cast the rim with an E section on the inner side, the width of the recess thus formed is about three times the thickness of the lagging boards. The lagging boards rest upon the inner edge of the recess thus formed, the space between the outside of the lagging and the upper edge of the recess is filled by curved blocks of wood which are made a tight fit, and hold the lagging boards in their places. The block

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergstrath Dr. Von Quast, Director of the Royal Bergakademie, Clausthal, the Harz, North Germany.

are attached to the rim by bolts, and curved or inclined on the inner surface so that the rope shall be guided when it comes against them to the cylindrical surface of the drum. For the smaller sizes of drums the side plate may be cast whole, and are usually six in number. When the drums are of considerable size the side plates may be cast in halves and joined together by bolts, and the number of arms increased to eight. The outer ends of the arms of both side plates are usually connected together by bolts passing through eyes on bosses cast on the arms near the rim. The corresponding arms of the two side plates are placed parallel, and the bolts connecting them are all parallel to the drum shaft. The connection is made more rigid if the connecting bolts pass W wise, or zig-zag from one side plate to the other; in which case the side plates may be so placed with respect to each other, that the arms on the one side are opposite the spaces on the other side. The ends of two connecting bolts will then pass through bosses in the outer ends of the arms. Instead of passing the ends of the connecting bolts through the arms they may be passed through the rim beneath the lagging.

AUTOBIOGRAPHY OF JAMES NASMYTH.

In the history of mechanical engineering the introduction of the steam-hammer will always mark the commencement of a new and important era, and with that most powerful aid to manufacturing progress the name of JAMES NASMYTH will ever be inseparably connected. The steam-hammer is, however, by no means the only invention for which the industrial world is indebted to him; for many of the most approved tools, and perhaps the Bessemer process of steel making, would probably never have existed but for the ingenuity and suggestiveness of the subject of the present memoir. The greater reliability of an autobiography as compared with the most careful compilation made after the death of the individual whose deeds it is intended to perpetuate is indisputable, since even the most conceited autobiographer has the advantage of a knowledge of facts which could scarcely be expected from his historian, who would, moreover, be naturally disposed to speak nothing but praises of the dead. Mr. Nasmyth's autobiography—James Nasmyth, Engineer: An Autobiography. Edited by SAMUEL SMILES, LL.D. London: John Murray, Albemarle-street—is more than usually free from tedious or egotistic matter, and as his life has been one of continued activity in endeavouring to provide for the mechanical wants of the day, of course with the hope of his own fair remuneration for his efforts, a more attractive and readable volume need not be wished for. The narrative, as the editor very truly says, abundantly illustrates Mr. Nasmyth's own definition of engineering—common sense applied to the use of materials. In Nasmyth's case common sense has been more especially applied to facilitate and perfect work by means of machine tools, recognising the fact that tools or machines in iron or steel are the most efficient method of economising man's power, and enabling him to intelligently direct the active and inert forces of nature.

Not the least attractive and creditable feature in Mr. Nasmyth's autobiography is the handsome manner in which he acknowledges the influence of his father's attainments upon his own career; but there can be no question that James Nasmyth laboured earnestly to turn to the best advantage the opportunities for acquiring school knowledge which were offered him. Passing over the record of his early childhood, which does not appear to have differed widely from that of other children, we come to an interesting chapter detailing the commencement of his mechanical studies, which gave him an acquaintance with the elements of arithmetic and geometry, whilst he was at the same time acquiring practical knowledge from his attendance at Patterson's foundry and Smith's chemical laboratory; and from occupying himself in his father's workshop at the lathe, the furnace, or the bench. His expander and road steam carriage, described and illustrated in this chapter, afford good proof that his mechanical skill had begun to develop itself even before he came to London. The two following chapters trace his progress until he is settled in the Metropolis as the private secretary to Henry Maudsley. Another chapter which will be read with interest is that relating the circumstances of his beginning business at Manchester, and his partnership with Holbrook Gaskell. Accounts of his marriage, travels in France, Italy, and elsewhere; of the steam-hammer, pile-driver, and his later inventions, are given in subsequent chapters, which brings the reader to those on his astronomical pursuits and retirement from active business. The illustrations are numerous and beautifully executed, as, indeed, might be expected, considering the name of the publisher, many of them being from Mr. Nasmyth's own paintings and drawings; some of these—the Origin of the name of Nasmyth, the Fairies, the fac simile of his first drawing of the Steam-Hammer, and the Antiquarian, for example—show great artistic value, and fully justify the remark, that if he had not devoted his business life to mechanics he would, like his father, his brother Patrick, and his sister, have taken a high position as an artist. Apart from its value as a biography, the volume contains so many suggestions on general subjects that it cannot be too widely read by all really desirous of knowledge and progress.

THE PROGRESS OF ENGINEERING.

An interesting outline of the progress of several important branches of engineering was given in his inaugural address for the session at the meeting of the Society of Engineers on Monday by Mr. JABEZ CHURCH, M.I.C.E., F.G.S., who has been re-elected to the office of president. After reviewing the work done by the Society during the past year and referring to its present satisfactory position, he dwelt upon the advantages offered to the junior members of the profession by the series of lectures which were inaugurated during last year, and which are in course of being delivered. The President next reviewed the progress of electric lighting during the past year, noticing the most recent additions to existing systems, and describing some of them. Discussing the Electric Lighting Act of 1882, the President observed it was more or less tentative in its nature, and that the newness and inconclusiveness of the subject with which it dealt necessarily made it so. He pointed out several obscurities in the Act, especially in regard to points already dealt with in a different manner in special local Acts. From electric lighting Mr. Church passed on to the subject of illumination by means of gas, describing the various improvements and quasi improvements which were the outcome of the past 12 months. He then went on to show the impossibility of effecting anything like real economy in gas lighting, no matter what burner was used, unless a perfect and reliable medium for governing the supply of gas to the burner was interposed between the point of consumption and the meter. He pointed out the wastefulness of most of the ordinary gas fittings in use, and the general ignorance of the correct principles of gas burning, and expressed a hope that the day would come when gas companies would be enabled to see that their customers were supplied with proper fittings, just in the same way as water companies now looked after their customers with regard to the appliances for governing or regulating the water supply.

Touching upon the Metallurgy of Iron and Steel, the President noticed Mr. John Giers' invention of "soaking pits," in which the steel ingots were placed as soon as they were cast, and where they retained their heat until they were passed on to the rolling mill, the expense and time occupied in reheating the ingots being thus saved. He noticed the satisfactory progress of the Thomas-Gilchrist process, and concluded this section of his address with a statement of the manufacture of steel in the world during the past year. He placed the number of converters at 360, and their aggregate annual productive capacity at 5,800,000 tons of steel. Mr. Church then noticed the Manchester ship canal, and various other projects of a similar character contemplated or commenced, amongst the latter being the Bremen canal, which, when completed, will make Bremen a port in reality, whereas at present it is only one by name, owing to the shallow and tortuous nature of the River Weser. The completion of the St. Gothard Tunnel, and the progress of the Channel Tunnel were next referred to and commented upon. The address was attentively listened to throughout, and at the close was acknowledged by a cordial vote of thanks. The book-premiums awarded for papers read during the year were to Messrs. C. H. W. Biggs and W. Worby

Beaumont for their paper on "Notes on Electric Lighting," and to Mr. W. Martin for his paper on "The Strength of Boiler-Flues." The financial condition of the Society is satisfactory.

MINING MACHINERY, MILLING MACHINERY

Of the MOST APPROVED AMERICAN PATTERNS

GOLD MILLS.

The California pattern of Gold Stamp Mill is universally accepted as the most perfect, economic, and efficient made.

We have over 900 stamps in successful work in the various Western Gold Districts.

SILVER MILLS.

Silver amalgamation in Pans is essentially an American system evolved after years of work on the rich silver mines of Nevada.

We have over 500 Stamps, with necessary pans, settlers, roasting furnaces, &c., all of our own manufacture, at work in different silver camps of the United States, Mexico, and South America, and Phillipine Islands, Asia,

CONCENTRATION MILLS

Of the most approved German pattern and arrangement, or with Stamps and Frue Vanner Concentrators for low grade silver ores, light in lead. We have over 20 large German pattern mills at work on lead, zinc, or copper ores, and numerous Vanner mills on ores never before successfully concentrated.

Mining Pumps, Cornish pattern, of the largest sizes, Hoisting Engines from 4 h.p. up to the largest direct-acting engines to sink 3000 feet.

SMELTING WORKS.

We have 80 Water Jacket Smelting Furnaces in use from 20 in. circular up to 54 in. by 60 in. for lead and silver smelting; and special High Jacket Furnaces for copper ores.

Engines of any size, plain slide valve, Corliss, compound Corliss. Boilers, all sizes. Leaching Mills, Hallidie Wire Rope Tramways, Comet Crusher, with capacity of 12 to 20 tons per hour. White, Howell, Bruckner, and Stetefeldt Roasting Furnaces, &c.

We have had twenty years' experience in the manufacture solely of MINING MACHINERY, and have special facilities for shipping to all foreign parts through our New York Office, where all details of clearance, shipment, and insurance are conducted. Our machinery is already well known in Mexico, Peru, Chili, Venezuela, Honduras, and other South American countries.

Correspondence solicited. Descriptive Circulars and Catalogues on application.

FRASER & CHALMERS.

PRINCIPAL OFFICE AND WORKS.

NEW YORK OFFICE

Fulton and Union Streets,
Chicago, Ill., U.S.

No. 2, Wall Street,
New York, U.S.

COLORADO OFFICE—CHEESMAN BLOCK, DENVER.

NEW QUEBRADA COMPANY.

The intermediate report of the directors, prepared for presentation to the shareholders, states that the financial results cannot be definitely ascertained until all the year's produce has arrived in this country and been sold. The complete accounts for the year can hardly be ready before Midsummer, and the directors hope and believe they will prove satisfactory; but this is, of course, dependent upon the prices that may be realised for the ore and regulus still to be sold. The output of ore was 47,600 tons, 33,400 tons in 1881 showing an increase of 14,200 tons; and of regulus to the coast 3300 tons, against 2300 tons in 1881, showing an increase of 1000 tons. Of this output Aroa Mine contributed 44,300; Tititara 3300 tons. The ore will probably average about 19½ per cent. of copper, and the regulus about 20 per cent. of copper. The ore which remained at the company's smelting establishment on Dec. 31 in various stages of treatment was 11,000 tons, as compared with 6000 tons at the end of 1881. Of the exported mineral about 21,000 tons of ore and about 2800 tons of regulus realised rather over 13s. per ton on the average.

The output from the Aroa mine has largely exceeded that of any former year, and may perhaps have reached a limit beyond which it may not be advantageous to increase it for the present. The underground and surface operations have been conducted with regularity and without accident, and the nature of the ore yielded by the lode shows no material change since last reported. The Tititara Mine has produced ore averaging over 15 per cent. copper, and it is now the board's intention to open up this large and important lode by a new adit, so as to connect it with the Bolivar railway direct. Should the lode hold good at the point of intersection, and maintain its character, as disclosed by the higher workings, the new level would open up a very large and valuable ore body, which, in conjunction with the output from Aroa, could not fail to place the company in a satisfactory position as regards its future prospects.

The board has devoted much attention to this mine, and has also caused a careful survey of the ground to be made between the end of the present railway siding and the new level, and the cost of effecting such railway connection has been carefully calculated. The ground is so rugged that it would be quite impracticable to work the traffic by locomotive traction for the whole distance; but the railway siding is to be at once extended for about one mile on a ruling gradient of 1 in 19, and then an incline will be made up the mountain slope upon a gradient of 1 in 2, so that the down load may be utilised to draw up the empty wagons. The directors have every reason to hope that these measures will be attended with a success equal to that obtained at Aroa, from which mine, by steady application and development, the output has been increased from 8400 tons in 1878 to 44,300 tons in 1882. All the operations are being conducted with the constant object of providing for the permanent use of the undertaking.

The past year's operations in the smelting and reduction works shows a production of some 400 tons of regulus over the previous year. There are now eight blast-furnaces erected besides two reverberatory furnaces, and the second hydraulic engine has been working for some time in a very satisfactory manner. Attention is being given to labour-saving appliances in this department, and now the smelting works are thoroughly established considerable economy may be, it is believed, introduced in this way. Raised sidings have been constructed, by which the heaps of ore for roasting will be made direct by tipping the wagons in lieu of wheeling as heretofore, and other improvements are being organised. The superintendent continues to express his belief that the regulus will be eventually brought to 35 per cent. of copper, which could not fail to give highly satisfactory results.

As to the available supply of labour, it is shown that in 1878 161 hands were employed, whereas there are now three separate establishments in full work, and the numbers appearing on the pay-sheets are:—For Aroa, 319; for Tititara, 51; for smelting works, 278—648 in all. This very large increase has been secured without raising the price of labour, and the future development of the mines and works is not likely to be retarded by the want of labour, either at surface or underground.

Over 32,000 tons of mineral have been conveyed to the coast, independently of 18,600 tons to the smelting works, and the Bolivar Railway Company directors have sent out a supply of new wagons, engine, lighters, &c., to meet the increased traffic requirements.

MOUNTS BAY CONSOLS.—The reports from this company's three mines which have been just received seem to show that the prospects all round are improving considerably. They state that the burning-house at Sydney Cove will be ready in a few days and a considerable quantity of stuff is awaiting its completion. At Pembro the branch lode cut last week is turning out immense stones of copper ore of high value, and from all appearances the main lode itself, when cut, will prove to be something very good, while at Trebarvah the parcel of copper just about to be sold will be the largest yet made by the company, and its superior quality gives a large margin of profit.

WHEEL SISTERS.—At the meeting on Tuesday the accounts show for 16 weeks' working a loss of 923l. An application is being made to the lords to give up the royalties, a question which has been under consideration for some time, and which both in this and other mines is now receiving a considerable degree of attention. A correspondent referring to this subject asks where are our M.P.'s representing the

mining metallic districts, that they do not bring such an important matter before the House of Commons? There is probably no more momentous question which demands legislative consideration than that of the many royalties which are exacted in Devon and Cornwall.

TREVARREN UNITED.—It is understood that at the Parka Mine another lift of pumps has been dropped, and sinking is progressing rapidly. It is expected that the lode at the next level will be still richer than the one now being worked, although at the present a large margin of profit is left.

EAST WHEAL ROSE.—It appears that the greatest energy is being displayed in opening up the south or new part of this sett, which is about ½ mile square, and all the lodes stand entire from surface to the bottom. They have been now thoroughly proved, and are found immensely rich; sufficient ore, it is believed, lies to hand at shallow depths throughout the various lodes without touching the deeper levels. This, it is held by the management, can be worked at a very low cost, and will leave a large margin of profit. The large number of lodes, their great extent and productiveness, is said to ensure permanent success.

TRESAVEAN.—This mine is, it appears, drained about 70 fathoms below adit, or 130 fathoms from surface. Caddy's lode, it appears, is looking well at all points, and about 80 tons of tinstuff was drawn from it last week for the stamps. Another important point is almost available at William's shaft, which is now clear and dry 130 fathoms, and here it is intended to put on tributaries to break copper, of which it is said there is a large quantity in sight. Preparations are being made for another 16 heads of stamps, and more buddles are being made so as to keep pace with the fast increasing quantities of lode-stuff now being broken.

A GENTLEMAN lately returned from the West Indies and South America, and used to the control of native labourers, is desirous of an APPOINTMENT as RESIDENT MANAGER on a PHOSPHATE MINE, or to REPORT on NEW CONCESSIONS. Has had ten years' experience with mineral phosphates, guano, and nitrate of soda, and would undertake the analysis of the same. Address, "Sombbrero," Messrs. Deacon and Co.'s Advertising Offices, 154, Leadenhall-street, E.C.

A GENTLEMAN, having a large number of shares in good Mining and other properties, wishes to EXCHANGE SOME of THEM for others in companies of equal standing and prospects. Address, "G. M. H.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

A YOUNG MINING ENGINEER, graduate of Freiberg, well versed in Mining and Metallurgy, Common and Geological Surveying, WANTS EMPLOYMENT, perfectly conversant with the English, French, German, and Spanish languages. Excellent references. Address, "W. Ldgr.," care of American Exchange, 449, Strand, London.

SUPERINTENDENT REQUIRED for a MINING and TRADING BUSINESS on the Sea Coast in Bolivia, South America. A technical knowledge of Mining not indispensable. A general mercantile experience and a knowledge of the Spanish language necessary. Apply, by letter only, to "Secretary," care of J. Sheppard, Esq., 12, Old Jewry Chambers, E.C.

WINDING ENGINES.

WANTED, a PAIR of 16-inch HORIZONTAL, geared 4 to 1 to a 14 feet drum, 3 feet wide. Good Secondhand.

Particulars and cash price to T. and W. MORGANS, Consulting Engineers, Guildhall, Bristol.

WANTED, secondhand or new, COMPRESSOR and FOUR ROCK DRILLS, complete, for a Metallic Mine in Devonshire. Price and particulars to MOSES BAWDEN, Tavistock.

TUNGSTEN ORE—WANTED TO BUY.—Apply, by letter, to "Omega," MINING JOURNAL Office, 26 Fleet-street, London, E.C.

MINING JOURNALS.

FOR SALE, ELEVEN BOUND VOLUMES, for the years 1853, 1854, 1856, 1857, 1858, 1859, 1861, to 1865, inclusive. Address, "W. X.," MINING JOURNAL Office, 26, Fleet-street London, E.C.

CARDIGANSHIRE MINING DISTRICT.

MR. D. C. DAVIES, F.G.S., OSWESTRY, intends shortly paying a professional visit to this district; and will be glad to receive communications concerning the examination of Mineral Properties.

BRATSBERG COPPER COMPANY (LIMITED).

Notice is hereby given, that the directors have THIS DAY DECLARED a DIVIDEND at the rate of FIVE PER CENT. per annum, PAYABLE on 21st inst.; and that the Transfer Books of the Bratsberg Copper Company (Limited) will be closed from Wednesday, the 14th, to Wednesday, the 21st February inst., both days inclusive, to enable the list to be settled for the payment of the same. By order of the Board,

H. C. MURCHISON, Secretary.

Dated, 8, Austin Friars, 8th February, 1883.

PANULCILLO COPPER COMPANY (LIMITED).

Notice is hereby given, that the following MORTGAGE DEBENTURES, to be PAID OFF at par on the 15th day of May, 1883 (when the interest thereon will cease), at the Consolidated Bank (Limited), 52, Threadneedle-street, London, were THIS DAY DRAWN at the offices of the Panulcillo Copper Company (Limited), in the presence of the undersigned:—

	3	6	9	16	25	28	36	40	46	56
50	68	77	84	92	106	107	108	134	135	
137	138	146	148	155	159	169	171	179	185	
188	193	194	200	201	218	224	243	263	265	
278	292	302	316	317	322	328	338	337	341	

50 bonds for 150l. sterling each, amounting to the sum of £5000.

J. S. ALEXANDER, Secretary.

(Countersigned) W. E. VENN, Notary Public.

The drawn bonds and coupons, due 15th May next, may be presented at once at the Consolidated Bank, for payment, in anticipation of maturity, under discount at the rate of 3 per cent. per annum.

23, Great Saint Helens, London, 6th February, 1883.

		LEAD ORES.			
Date.	Mines.	Tons.	Price per ton.	Purchasers.	
Feb. 2—	Park	30	9 16 6	Adam Eyton.	
—	Minera	77	9 1 6	Panther Lead Co.	
—	ditto	53	9 5 0	Runcorn Company.	
—	ditto	8	9 10 0	Walker, Parker, & Co.	
8—	Talargoch:				
—	Maesyrerwddu	60	9 9 0	Adam Eyton.	
—	Cotilla Llys	10	9 17 6	Walker, Parker, & Co.	
—	North Hendre	50	9 9 0	ditto	
—	Speedwell	5	8 16 6	Adam Eyton.	
—	Cotilla Mawr	5	8 16 6	Walker, Parker, & Co.	
—	Tankerville Great Consols:				
—	Tankerville	40	8 15 6	ditto	
—	Bog	20	8 10 6	Walton and Co.	
—	Pennerley	50	9 0 0	Walker, Parker, & Co.	
9—	South Darren	45	13 16 6	Panther Lead Co.	

		BLENDE.			
Date.	Mines.	Tons.	Price per ton.	Purchasers.	
Feb. 2—	Minera	40	4 9 6	Vivian and Sons.	
—	ditto	60	4 9 6	ditto	
—	ditto	75	4 4 0	ditto	
—	ditto	60	4 1 8	ditto	
—	ditto	55	4 1 6	ditto	
—	ditto	60	4 1 6	ditto	
—	ditto	20	3 16 6	ditto	
7—	Talargoch	50	3 10 0	Villiers Spelter Co.	
—	ditto	50	3 9 0	ditto	
—	ditto	100	3 7 6	ditto	

NORTH GREEN HURTH.—Jas. Poigias, Feb. 1: The deep adit level is progressing rapidly, but without any particular change. The vein in the rise in the back of south driftage presents a kindly appearance. It is now very small, and if no change for the better is seen during the next week I purpose putting the men to drive on the level south. The rise in the shallow level is a limestone. No change worth noticing.

NORTH TREKERRY.—Pryor and Son, Feb. 8: We are pleased to inform you that we have intersected another copper lode in the deep adit cross-cut north of Scortier Consols engine-shaft, which as far as we can yet see is from 15 in. to 2 ft. wide, composed of mudiic, blende, peach, spar, and copper ore—a splendid looking lode, equal in appearance to the main copper lode in places, which is letting out a large quantity of water; this lode is all in whole ground throughout the entire length of the property, and when developed will, in my opinion, open up some valuable copper ground, and it may be called a mine of itself, but should not be recommended opening on it until the Great Flat tin lode is out, to accomplish which we are pushing on with the driving of the deep adit cross-cut with all possible speed, but the ground is a little harder since we cut the last named lode.

OKEL TOR.—H. Bulford, J. Rodda, Feb. 8: We continue to make good progress in sinking the new shaft east, and are now down nearly 4 fms. below the 65. We are also making good progress in the rise going up in back of the 80, against the shaft, and the lode both in the shaft and rise is of the same value as reported last week. We continue to drive a side tie in the 55 east. The lode in the 55 in bottom of the 65 is producing 20 tons of arsenical ore per fm. The lode in the back of this level is producing 12 tons of arsenical ore per fm. The intermediate end, between the 65 and 50, is producing 7 tons of arsenical ore per fathom. The lode in the 50 end east is looking just the same as for some time past. The lode in the 50 stop, on the intermediate lode, is 15 ft. wide, producing for this width 20 tons of arsenical ore per fm. In the western part of the mine we have two stopes working in back of the 65 east, yielding 11 tons of arsenical ore per fm., and the end driving between the 55 and 50 is producing 9 tons of arsenical ore and 1 ton of copper ore per fm. The 50 stop is producing 8 tons, and the 35 stopes (two) are producing 9 tons of arsenical ore per fm.

PARRY COPPER CORPORATION.—T. Mitchell, Feb. 8: We had no particular change to notice this week. The lode in the 65, east of cross-course, has become a little disordered by a small cross joint. The forebrest at present appears to be mixed up with more spar and sulphur, but we expect this will work out again shortly, as the lode presents a very promising appearance.

PATTERSYKE AND CLARHILL HEAD.—John Peart, Feb. 2: Top Level: In the south end we are still cutting cross westward to prove the west vein with two men. We have gone through a small vein, with samples of lead ore in it, but I think the main vein is still before us. Where we have got this level, it is very much broken down; in fact it is closed going forward. We have, however, only about 9 fms. more to open out before we reach the forebrest. In my next report I hope to inform you that we have reached the forebrest. We have cleared out and put into good working order the last two weeks 12 fms. level.

PENHALLS.—S. Bennetts, J. Goynne, Feb. 7: The 70 east end is producing some low quality tin stuff, but not of much value. On the south section of the lode the 60 east is worth 74. per fathom, and the west end on same part is poor. In the 60 north the change to notice. On the Baldu lode the 40 east end is worth 64. per fathom, elsewhere there is no alteration worthy of notice.

PERRAN SILVER-LEAD CONSOLS.—Edward Moyle, Wm. Ninnes, Feb. 8: The following is our setting and general report:—Phoenix engine-shaft has been sunk, by 15 men, 1 fm. 2 ft.; total depth below the 60, 14 fms. 4 in. The 60 end sunk has been driven, by six men, 6 fms. 10 in.; total distance from shaft, 41 fms. 10 in.; reset at 54. 58. per fathom. The 60 end north has been driven, by four men, 6 fms. 10 in.; distance from shaft, 46 fms. 1 in.; reset at 32. per fathom. The 60 end south has been sunk, by four men, 3 fms. 10 in.; at an average price of 41. 11s. 6d. Average setting price for the month, 41. 15s. per fathom. It will be seen from the above that remarkably good progress has been made in the bargains, and from the nature of the ground this may be taken as an average speed of opening out the mine. We intend to sink the shaft 7 ft. more, which will then make its total depth below the 60 15 fms. 1 ft. 6 in. This will leave 1 ft. in. for a lode for the water, as we will drive north and south at 15 fms. in. as a lode can be seen in the United Kingdom, the lode will be opened out rapidly, and from the rich course of the lode in the north and south end of the shaft we consider that we are now within reasonable distance of making good returns, that is, as soon as the dressing machinery is erected, which will be gradually increased as the mine is opened up. With a short drive north No. 1 winze can then be communicated, and a large section of valuable ore ground opened out for stoping north and south of the winze. About 30 fms. from the shaft a rich course of ore has gone down below the 60 south, which when drained by the 75 we shall communicate by a winze which can be used for the purpose of sinking the shaft, and then the lode in position to sink two more stopes north and south of this winze. In all our long experience in mining we have never seen a more promising, masterly, or richer lode for the depth than that of Phoenix, or one more like a permanent dividend mine. The general characteristics of the ground on each side of the lode (blue killas or clay-slate) and the lode itself are such as must produce ore. We have never known them to fail, and we have the fact in the magnificent lode to-day in the bottom of Phoenix shaft—the deepest point yet proved. The same characteristics accompanied the lodes of East Wheel Rose, West Chertion, and other famous dividend mines in this district, but we need no analogies as a guarantee of what our lode will be, as we have a lode now in Phoenix, which will pay as large dividends as any mine has done in the district, as an inspection of it will prove, and the rich working at surface coming therefrom. Looking at the value of the lode in the deepest point in the mine and our prospects north to intersect the elvan course and those south to intersect the cross-course, we cannot too strongly impress upon the minds of the shareholders the great value of their property, and we honestly believe that a very rich harvest is in store for them as a reward for their perseverance, and with regard to an estimate of the value of the lode, we are convinced that our view set forth in our report of the 8th inst. are correct—i.e., 1 fathom driving in the 75 means over 12 tons of lead between that and the 60. Our only ambition is to place the mine in the dividend list, and as we have stated before, it will justify any reasonable outlay to develop it. We only ask sufficient funds to enable us to do so.

POLCREBO.—W. H. Martin, Feb. 7: Engine-shaft: In driving the 30 fm. level east we have intersected a small cross branch which we have passed through; we are driving on the south part of the lode, which contains more mudiic and yields tin throughout, and letting out more water. After we have driven a few feet I purpose to take down the lode standing north of the level. In the 17 south cross-cut the ground is favourable for driving, and the men are making good progress.—Highburrow Shaft: We expect to complete the cutting of the plat by the early part of next week. In opening the ground for plat north we met with droppers, which contain tin; in sinking below the 17 they will drop into the lode. The sinking of this shaft will be a very important point.

POLCREBO.—W. Bennetts, Feb. 7: Last Friday we dropped the hanging-lift a little more than 100 ft. below the 100 level, and were able to take out the broken pump, and replace it with a new one. We had to stop to connect the rods for the bottom plunger pole; this is now working very well, and forking the water below the 90. At our present rate of progress we ought to see the 100 this week.

PRINCE OF WALES.—S. Roberts, Feb. 7: In the 102 east the lode is split in two parts, each part 1 ft. wide, producing tin; value same as last week. The lode apparently will come together in a very short distance driving, where, we have reason to believe, it will prove good. In the rise in the back of this level the men are making fair progress, etc. In the 102 west the lode is the same as which (broken) appears to be good. The lode in the 102 west is improving both in size and character, and ground more congenial for mineral. No change in cross-cut north at the 90 west. In a stop in the back of the 90 west the lode is 2½ ft. wide, worth 74. per fathom for tin and copper. In No. 1 stop, in back of the 90 east, the lode is 5 ft. wide, 94. per fathom for tin. The lode in No. 4 stop, in back of this level, is 3 ft. wide, worth 84. per fathom for tin. Tribute plumes much the same as for some time past.—Good Luck: In a stop in the back of the lode the lode is 10 ft. wide, worth 74. per fathom for tin.

ROMAN GRAVELS.—Arthur Water and Son, Feb. 8: There is no change worthy of remark in the mine since our full report to the directors last week.

RUSSELL UNITED.—J. Bray, Feb. 8: The lode in the 37, west of cross-cut, is 2 ft. wide, producing some copper and mudiic, not sufficient to value. The lode in this level east is 3 ft. wide, composed of capel and quartz, with large slabs of mudiic, and thickly spotted with yellow copper ore—a very promising end. Nothing new to report to Stephen's engine-shaft.

SILVER HILL.—G. Rickard, Feb. 8: Since passing through the last run of hard spar, etc., we have had very favourable ground for driving the tunnel level cross-cut, and good progress is being made towards the lode before us. The ground at times is interspersed with quartz of a crystalline character, and also with mudiic and blende, spotted with yellow copper ore, which shows it to be highly mineralised. Water still continues to flow strongly from the forebrest, as no period had we so much issuing as at the present time. From these indications I shall not be surprised at any day striking into a good lode.

SINCLAIR.—Feb. 8: Everything works very satisfactorily at this mine; there is a strong leader of lead coming from the forebrest of the cross cut, which must be coming from the vein, great progress is being made by the men, and everything will be done to accomplish the objects we have in view.

SORTBRIDGE.—Wm. Skewis, Feb. 7: After a careful examination of the mine to-day, I find that in driving a cross cut north from the 40, directly opposite to the footway shaft, we have cut into a lode of copper ore equal to the specimens which I have forwarded to the office, at which I feel sure you will be much pleased. When I have this lode cut through we shall have about 9 ft. more to drive before cutting the 30. The tin lode, which has produced a large quantity of valuable tin stuff at the 30. On Saturday last I found we had a good discovery of copper on the north side of this lode, showing indications that a good discovery of copper, in addition to tin, will be made as this level is extended eastward. The lode in the stopes on No. 2 tin lode is somewhat improved since my last report. The tin dressing and burning-house, with other necessary surface work, is progressing favourably considering the exceptional roughness of the weather.

SOUTH CROSBURROW.—W. Rich, W. Williams, H. King, Feb. 7: The dam in the 50 fm. level, mentioned in our last report, is effectually keeping back the water that was coming from the West Francis part of the mine, lately suspended. Marshall's shaft is enlarged to the full size, and the 30 fm. level; the men are now engaged cutting plat at the bottom of this shaft before fixing the double skip-road. The 78 and west yields a little tin; the 65 west is worth 64. per fathom, and the stop in the back of this level is worth 84. per fathom. We have not yet resumed driving the 54 and west on account of the increase of water. The clearing and timbering of the 20 fm. level cross-cut, north of engine-shaft, is being urged on, as well as the cutting of a trip cross-cut, at this level. The 30 end, east of engine-shaft, yields a little tin. The lode in the 30 end west has a strong and kindly appearance, the two stopes in the back of this level maintain their value—154. to 204. per fathom respectively. The 40 end east is worth 54. per fathom. The 50 east of King's is without tin to value; two stopes in the back of this level are worth 84. and 154. per fathom respectively. The 60 end east is worth 84. per fathom. The 80 east is worth 124. per fathom. The 90 east is without alteration to notice.

SOUTH DAREN.—H. James, Feb. 8: The lode in the 130 east is wide and strong, producing 12 tons silver-lead ore per fathom; we expect improvement as we advance. The 130 west is being pushed forward a lode of capital ore-bearing character, and we expect to have good lead when we get under the rich ground seen in the sole of the 120, a few fathoms in advance. The lode in the 120 east is about 4 ft. wide, and yielding 2 tons silver-lead ore per fathom. A stop in the back is worth 1 ton silver-lead ore per fathom. The lode in the 120 west is strong and promising, composed of a very kindly killas, intermixed throughout with lead, and about 2 ft. wide of carbonate of lime and spar, with a mixture of lead and copper ores; we expect this end will improve as we go forward. A stop in the back, east of winze, is worth 1½ ton silver-lead ore per fathom. Stop west of winze is worth 2 tons silver-lead ore per fathom. There

has been no lode taken down in the 110 east for the week. A stop in back of 110 west, close to shaft, is worth 10 cwt. silver-lead ore per fathom. A stop in back, a little behind the forebrest, is worth 15 cwt. per fathom. There is no change in the tribute pitches to comment upon. Surface operations are being carried on with all speed, and the machinery is in good working order.

SOUTH DEVON UNITED.—Wm. Hooper, Feb. 8: The lode in the 110, east of Brook shaft, is fully 5 ft. wide, with a value of 184. per fathom; there is in connection with this size, underlie, and composition—in fact, its general appearance and character—such points as lead ore to regard it as a lode of great promise. The killas in which the lode is embedded is of the finest possible description. The lode in the 110, west of Brook shaft, is in fact, precisely similar in character to that in which the rich lode has been found in Brookwood and the Emma portion of the property. There is but very little doubt but that this level is extended east courses of ore will be laid open equal in importance to any that has been found in this section of the company's property. The stopes in the back of the 110 and 100, west of Brook shaft, are worth 84. and 64. per fathom. The stopes in the back of the 110 east are worth—No. 1, 94.; No. 2, 84.; No. 3, 74. per fathom. In the lode in the winze in the bottom of the 100, east of Brook shaft, the part farthest (5 ft.) is worth for length of winze 304. per fathom. We have not as yet got the full size of the lode, but no doubt the men will be down far enough by next week to enable us to give its full width. In the stop in the back of this level the lode is 4 ft. wide, with a value of 84. per fathom. The lode in the 90, east of Brook shaft is 5 ft. wide, containing capel, spar, with stones of both mudiic and copper ores. The lode in adit level, west of old sump shaft, is without any change, presenting much the same appearance as for some time past.—Picketstone's Shaft: Little or nothing has been done in driving the level past the 155 since last reported on. In consequence of the kingpost having broken, however, I am pleased to say this is again repaired, and the water almost drained to enable the men to resume the driving of the above.—Martin's Shaft: The men here are getting on well with the squaring down the rise. By the end of the week they will be down to the 80. The engine-house for the 25-in. hauling-engine is up and covered in. The boiler-house is in a fair way of completion.

SOUTH FRANCES.—Charles Craze, Feb. 7: At Pascoe's shaft the shaftmen are busily engaged fixing the standing lift at the 225, and we shall be pushing on the sinking of the shaft below in the course of the present week. The rise in the back of the 225 west appears to be very near the winze sunk below the 215. The lode is letting down more water, and we expect to hole in a day or so, when a good piece of ground will be available for stoping. The stop in the back of the 225 east is worth 184. per fm. The 215 east is worth 124. per fm.; we have an improvement in the stop over this level. There are fine rocks of tin in the lode, which is worth for width—8 ft.—204. per fathom. The winze sinking in the bottom of the 215 west is worth 204. per fathom for the length—12 ft.—with more good lode standing to the north. No. 1 stop, in the back of this level is worth 154. per fathom, No. 2 stop is worth 104. per fathom, No. 3 stop is worth 124. per fathom, and No. 4 stop is worth 124. per fathom. The 205 east is worth 124. per fathom. Other stopes and levels in the mine when last reported on.

We have commenced to sink Marriott's shaft under the 183 by nine men; this work will be pushed on with all speed. Since my last report we have had to do considerable repairs to the skip-road at Pascoe's, which rather interfered with our driving; the road is now in fair working order, and we are drawing more stuff. The engine and pitwork continue to work well, and at present we have no difficulty in keeping the mine in fork.

SOUTH TOLCARNE.—Thomas Angove, Samuel Arthur, Feb. 8: The engine-shaft sinking to the 70 level, 70. per fathom. The 70 and west on flat lode, which we have now commenced to drive on, is very large, the part we are driving on is worth 74. per fathom. The 70 end east on Fraser's lode is at present not driving. The 60 end west the lode is worth 104. per fathom. The stopes in back of the 60 Nos. 1 and 2 are worth 94. per fathom each. The 60 end east the lode is 4 ft. wide, and giving out a little water, worth 64. per fathom. The 50 end west lode worth 54. per fathom. The 50 end east lode worth 64. per fathom. The 40 end east the lode is small, worth 44. per fathom. The stop in back of this level is worth 104. per fathom. The lode in Taylor's shaft is worth 304. per fathom.

TAMAR.—R. Golds, Feb. 8: On the 27th ult. we let the rise going up against the new shaft to six men at 184. per fathom; the ground is improving. The capels referred to in my former report are fast disappearing, and hope better progress will be made in future. To drive south by four men at 34. per fathom; the lode at present is unproductive, but hope as it gets clear of the cross-course just passed through it will again be found productive. No tribute setting, the men leaving back for eight months.

TANKERVILLE GREAT CONSOLS.—A. Waters and Son, Jan. 30: Having got fully into all matters connected with the above mine with Captain John Smithan to-day, we do not see our way clear to make any additional remarks respecting the general state of things or values given in the report of Jan. 25.—Potter's Pit: The water here is going down slowly, and we hope that dry weather will soon come, and we are enabled to get down to the rich ore ground, when the returns could be increased quite 40 to 50 tons per month.—Pennerley Mine: The stop in the 120, west of cross-cut, on Warm Water lode, is improving as the men advance eastward, and we expect shortly to find the dip of the bunch seen in the 30. The 30 west near the shaft is suspended, and the men put to cut in the bottom of the shaft to sink a shaft in the lode of the rich deposits mentioned in previous reports, and which is to be seen along the bottom of the level, worth in places 6, 8, and 9 tons per fathom. The stop in back of said level, west of cross-cut, is worth 5 tons per fathom. The two stopes in bottom of the 30, east of cross-cut, are worth together 2 to 3 tons per fathom. The stop in roof of the level east of cross-cut is worth 30 cwt. per fathom. The 70 west makes good progress, and we are expecting to cut into the profitable ground in 2 or 3 fms. further driving. The other points and tribute pitches are without change to note for some time past. Pumping-engine and machinery, including the compressor and rock-drill, are all in good working order.—Bog Mine: The engine-shaft is now 5 fms. 2 ft. below the 175; lode 6 to 8 ft. wide, of a congenial character for the production of lead ore and blende, and we are looking out for an early improvement as the mine is deepened. There is a run of ore ground along the bottom of the 175 west of the junction of the three lodes west of shaft, and it is only fair to expect that a similar deposit will be met with (following the dip of the strata, and conformable with the dip of the ore deposits generally which is westward) to the east of the said intersection. Seeing the strong lode in the bottom of the shaft, and the fact that it is with rich stones of bright soft galena and fine lumps of blende, we do feel sanguine that better days are in store for us here. We are pushing on the sinking of the engine-shaft night and day, men relieving in the place four men in each core, hence no stone is left unturned to get down to another level. The 175 east, on the south lode, is worth ¼ ton lead ore per fathom, and will improve as we go forward. The 183 south, on the same lode, is yielding stones of ore, but we expect a change for the better as the end goes forward to Bland's shaft. The 115, east of Bunting's shaft, is not far enough to catch the blende deposits seen in the 120 and upper levels. The 104 level, east of Weston's shaft, into the hill ground, shows a very promising lode in loose ground, composed of spar, stones of lead ore and blende, and looks like improving shortly; this is the best looking lode we have seen here since starting to drive the said level. We have 13 pitches throughout the mine, worth together 4 tons of lead ore and 10½ tons of blende per fathom. All the boilers are now in good condition, steam-pipe joints tight, and new crusher with machine jiggers and round baddies in full work, hence better headway than hitherto will be made. On Thursday next we set 70 tons of blende, and 40 tons of lead ore from the three mines as follows:—240 tons, blende; Pennerley, 80 tons; Bog, 20 tons; total, 140 tons. But for the water at Potter's pit we should not doubt have been enabled to make the above figures into round numbers (200 tons), and this, too, without touching the bunch of ore at the Bog, which is still beyond our reach under water. Hope to get into it shortly.

—Arthur Waters, Feb. 8: Our full report, dated Jan. 30, was intended for publication, but it did not appear in the Mining Journal or Mining World of Saturday last. Will you let it appear in those papers this week, and spare us the labour of going over the same ground—repeating ourselves—again to-night. The report, as you see, is a very full one, and it is quite up to anything seen last week, and both these mines are sure to do better as to returns in the near future. At Bog Mine the water is cut down to the bottom of the shaft, the 175, on all the lodes, being now perfectly dry, and we have sunk 14 trial pits in ore ground, and beg to state that the lode for 50 fms. in length is worth on the average quite ¾ tons of lead ore per fm. The western pit, 60 fms. from shaft, shows a lode worth from 5 to 6 tons per fm. All we can say to-night is that we shall sample 100 tons of lead ore in this mine on March 1 next. We have to-day sold from Tankerville Mine 40 tons of lead ore, at 34. 15s. incl. Bog, 20 tons at 10s. 6d., Pennerley, 30 tons at 9s. realising together 1241. 10s.

TREBARTHA.—Wm. Skewis, Feb. 8: The lode in the adit west is 3 ft. wide, composed of capel, quartz, mudiic, and tin; a very fine looking end indeed, and such as will lay open good stoping ground. The bob is fixed in its place at Kemphorne's engine-shaft, and the carpenter with other men are now busily engaged fixing the stands to carry the rods from the shaft to connect to the water-wheel. When this is done shaft tackles will be erected at each of the shafts—Kemphorne's and Rodda's. We are making every effort to complete the whole of this work as quickly as possible. After the foregoing work is finished we shall commence to fix in the stamps, which is now being brought to the mine, and also to lay out tin dressing floors.

TREMBLO.—Edward Chegwinn, Feb. 8: The following is my report of the above mine:—The shears is fixed in its proper position, and the main rods are placed in the shaft. The shaftmen are at present removing ladders and placing everything in the engine-shaft in a proper position for working. We are still driving the cross-cut south at the 16, and are cutting more water as we advance, but have not yet met with the south part of the main lode. The lode is (driving east of cross-cut on the north part of the Tremblo lode, the lode is about 15 in. wide, and worth for tin and copper 124. per fathom. In the 16, driving west of cross-cut on the north part of Tremblo lode, the lode is about 2 ft. wide, and worth for tin and copper 154. per fathom. As we open on this part of the lode east and west the water steadily increases. The winze sinking at the bottom of the level on Tremblo lode is at present down about 7½ fms. (out of the 16 fms.), where the lode has split into two parts a distance of 5 ft., therefore, I have been compelled to sink on the north part and leave the south part standing. The north sinking is about 2½ ft. wide, and worth 154. per fathom. We are taking down the lode at the adit level west of winze left by the old workers, so as to make the level large enough to receive launders for the bringing of water for condensing and other purposes. This lode is 2 ft. wide, and worth for tin and copper about 84. per fathom. In the adit end, driving east of cross-course on the Tremblo lode, the lode is 3½ ft. wide, and worth for tin 254. per fathom. We commenced yesterday to make all necessary preparations for the sinking of Pinnick's shaft. In a few days I will forward plans and estimate of the cost for the bringing in a sufficient supply of water from the river in the valley to the cistern. I met our engineer, Mr. Bickle, yesterday, and went into this matter with him, but shall still require some further time before coming to something definite. The carpenters are closing up and finishing as rapidly as possible to the engine-house. The engineers are making good progress with the stamping and winding engine, which will soon be completed. The dressing-floors and all other surface work is being finished with all dispatch.

TRESEVERN.—J. Frisk, W. Edwards, Feb. 5: We are pleased to report we have entirely cleared the choke at William's shaft, which was at least 25 fms. to go through and has been very expensive. The men are now engaged in putting in footways, and in order to get down to the lower levels as early as possible we have put on three additional hands. This part of the mine is now drained about 130 fms. from surface, and as soon as the ladders are fixed we hope to let a number of copper pitches, Caddy's lode, in all points of operation, maintains its size, and is looking remarkably well. We shall commence to assay all the tin stuff sent to surface, and the value of the different bargains shall be sent you in our next report. Gooch's lode, in the east end, is opening out wider and

looking better. We shall shortly be in a position to see it at least 50 fms. deeper, at which point we have every reason to expect it to be more settled and productive. Mitchell's shaft is sunk from surface on a copper lode to the shallow adit, the said lode being between Gooch's and Caddy's lodes and parallel with same. We have cleared and secured this shaft to the shallow adit for the purpose of fixing a footway required for the eastern part of Caddy's lode, and to get properly at the north shaft, which we intend making a drawing shaft to the 27, at which level we expect to have a considerable amount of copper and tin. At the engine-shaft the water is drained 68 fms. below the adit, and in a week or 10 days we intend sending the drop-lift to the 75 where we shall fix the next permanent lift. The 90 level, engine continues to work well and is forking with ease. At Wheel Boys, during the past week we have drawn 50 tons of tin stuff. The 38 heads of stamps are now in full work and doing good duty, and as soon as possible we shall commence making preparations for an additional 18 heads. We have two more round buddies being made and will be fixed as soon as possible so as to facilitate the dressing. Everything underground and at surface is being carried on with the utmost vigour.

TRESEVERN UNITED.—Capt. Hooper and Job, Feb. 5: We have completed sinking the bearers and clatern below the 20, put the same in its place, together with lift, etc., and are now sinking with all possible speed. No change to report at the south end, on Neil's lode, in the 20, since our last. The north end in this level is worth 34. per fm.—South Level: No. 2 stop is worked out. No. 3 stop is worth 54. No. 4 stop, 44. 15s. No. 5 stop, 44. No. 6 stop, 24. 15s.; and No. 7 stop, 24. per fm.—North Level: No alteration to report on in either of the stopes since our last. In the 10 the south end has improved, now worth 34. per fm. No. 5 stop, in this level, is worth 24. 10s. per fm. Tin will be ready for market on Friday next.

WEST CARADON.—N. Richards, Feb. 7: A stop in the back of the 50, on Caddy's lode, will yield 1 ton of copper ore per fathom. A stop and rise in the back of the 38, on this lode, will yield together from 2 to 2½ tons of copper ore per fathom. A rise in the back of this level, on Taylor's lode, will yield from 1½ to 2 tons of ore per fathom. A rise now being put up in the back of this level, on Gilpin's lode, to communicate with a winze sunk in the bottom of the 27, is producing stones of ore. We have just passed through Hallett's cross-course at the adit level on Gilpin's lode, and which for the present has much split up and disordered the lode, which is now hard and unproductive; but we hope the lode will make all right again, as we get below the influence of the cross-course. A winze, sinking below this level, will yield 2½ tons of copper ore per fathom. A rise and two stopes in the back of this level will yield in the aggregate fully 4 tons of ore per fathom. We have cleared about 70 fms. in the shallow adit, towards Jope's lode, and hope to reach the shaft in about eight or ten days from this date.

WEST CREBOR.—J. Andrews, Feb. 7: The 62 west is now driven about 12 ft. west of shaft, the lode in which is 4 ft. wide, and worth 124. per fathom. As the end is now sufficiently out of the way for fixing plunger-lift, the driving of it will be suspended until the lift is fixed, when the sinking of the shaft below the 62 and driving east and west will be resumed.

WEST GODOLPHIN.—T. Hodge, F. Hodge, Feb. 5: Counter Lode: In the 80 east the lode is not quite so rich for tin, but it is rather better in the present point than is gone down in the level above; we expect a richer lode as we advance east; we value it worth 154. per fathom. The other bargains do not call for any remark. We consider our prospects are better to-day than for a very long time past. The machinery is kept in good trim, and the mine kept drained to bottom. We have had very wet weather for surface work, but still our gear for drawing from the winze-shaft is in forward state.

WEST GONAMENA.—N. Richards, Feb. 7: We have commenced costaining the surface with the view of ascertaining where the first cross-course is, and also where the lode crosses the same. The main lode in the adit, driving west of shaft, is without change to notice since reported on last week; a very promising-looking lode, producing some mudiic and rich black copper ore.

WEST HOLWAY.—Feb. 8: In the 80 west the lode has undergone a slight change; a bed of chert has come in, 6 in. wide, and we daily meet with lead ore. In the 10 east the lode is composed of dark limestone, and spar, and yesterday we met with some fine rocks of lead. The lode in the 125 is of great strength, but no other change. In the Ram shaft the lode has been pinched of late, but is now opening out, and there is a nice mixture of lead in the bottom of the driving.

WEST KITTY.—Wm. Vivian, Feb. 8: In the 80 fm. level driving east the lode is worth 84. per fathom. In the 72 fm. level, driving east, the lode is worth 124. per fathom. In the winze sinking below the 72 the lode is worth 124. per fathom; stopes in the back worth 504. per fathom. In the 60 fm. level driving east the lode is worth 124. per fathom; stopes in the back worth 404. per fathom. In the 60, driving east of cross-cut, the lode is worth 74. per fathom; driving west, lode worth 84. per fathom. I have started a cross-cut to drive south at the 72, in the western part of the mine.

WEST LISBURN.—Wm. Northey, Feb. 7: Good progress is being made in driving the cross-cut north towards the new lode, and water is issuing freely from the forebrest, but little or no change has taken place in the nature of the rock, which looks favourable for the production of lead ore. The machinery is in good order, and working well.

WEST LOR AND LEEDS.—S. Harris, Feb. 8: The lode in the adit level, driving east of cross-cut, continues fully 4 ft. wide, worth 54. per fathom for tin, with every indication of further improvement.

WEST WHEAL PEEVOR.—W. T. White, Feb. 7: Setting Report: We are pushing on sinking the engine-shaft as fast as possible. We have now commenced to drive the cross-cut north from the shaft to the lode at the 60, at 74. 10s. per fm., this will be most convenient when accomplished for discharging the stuff at this depth. The 60 to drive east of main winze at 54. 5s. lode worth 104. per fm. The 60, to drive west of No. 2 winze, at 54. 5s. lode worth 104. per fm. Cross-cut to drive north at the 48, west of cross-course, at 64. per fm. Cross-course to drive north at the 48, west of cross-course, at 54. per fathom. We hope to cut the lode at this point the latter part of this month. We are expecting to meet with a productive lode here. In the winze to sink in bottom of the 36, west of cross-course, the lode appears to improve as we go in depth, producing stamping work for tin; price for sinking 54. 10s. per fathom. Cross-cut to drive south and west of cross-course at the 36, to cut Wheal Diamond lode, at 64. 10s. per fathom. Rise in the back of the 30, east of cross-course, at 54. per fathom; lode large, producing low quality work for tin. We also set six stopes on tuckwork, at prices varying from 24. 7s. 6d. to 44. 10s. per fathom; lode worth on an average about 104. per fathom. Of late we consider the prospects of the mine have improved, and we verily believe will turn out productive in the future.

WEST WHEAL TOLGUS.—John Gilbert, Feb. 8: Richard's Shaft: The lode in the 105, driving west of shaft, is 3½ ft. wide, and is composed of spar, mudiic, and stones of copper ore, and still letting out some water, and looking kindly for an improvement. No. 1 stop in the back of this level is yielding 3 tons of ore per fathom, and No. 2 stop in the back of this level is yielding 3½ tons of ore per fathom. In the 85, west of shaft, the north part of the lode is 3 ft. wide, yielding some mudiic and copper ore, and looking promising. The shaftmen have sent down the lift of pumps that we shall require for sinking below the 135 fm. level, and they are now getting the pulleys, rods, etc., in order as quickly as possible, and we are also taking up all the water can at the 95 to ease the lifts below that level.

WHEAL CREBOR.—H. Phillips, P. D. Holman, Feb. 6: The lode in the 132, east of No. 2 winze, is 1 ft. wide, composed of mudiic, capel, and stones of copper ore. There is no change in the end west of new shaft. Our stoping ground continues to yield in the aggregate 27 tons of copper ore and 6 tons of mudiic per fathom. We are forcing on the 72 and 48, east of new shaft by the side of the lode; the ground in the latter end has a very kindly appearance for the production of mineral.

WHEAL COATES.—The lode in the 80 fm. level was valued at 94. per fathom (not 24.), in report printed last week.

WHEAL GRENVILLE.—T. Hodge, Feb. 5: The sinking of Gooch's shaft is going on regular. The 130 east produces stamping work. The 173 east is worth 84. per fathom. The 165 east is worth 74. per fathom. The 150 east is worth 124. per fathom. The 120 west is worth 124. per fathom. The stopes on the whole, are turning out much as usual.

WHEAL HONY AND TRELAWNY.—W. Derry, J. Pearce, H. Lanyon, Feb. 7: During the past week we have made a further drop of our drawing lift in the engine-shaft, and yesterday commenced forking. The 103 end has been somewhat disordered since our last report, but is again showing its ordinary appearance. We hope to complete the dividing of the rise in the back of the level on Friday next, so as to re-arrange our air-pipes, and allow the stoping of the back of the 103 south of the old pass to proceed. When this is done the driving of the 98 level will begin; we are drawing some excellent work to-day, and our orestuff is turning out remarkably well on the floors.

WHEAL LUSKEY.—W. Skewis, Feb. 8: The lode in the adit west is from 2 to 3 ft. wide, producing some good yellow and grey copper ore; the appearance of the lode is much better than I have seen it for some time past, and I think we shall soon have a better improvement here.

COPPER ORES.

Sampled Jan. 17, and sold at Tabb's Hotel, Redruth, Feb. 1.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Mellancarr.....	82	£3 8 0	Mellancarr.....	64	£3 3 0
ditto.....	76	3 2 0	West Tolgus.....	69	7 11 6
ditto.....	75	3 6 0	ditto.....	64	7 3 0
ditto.....	74	3 1 0	ditto.....	49	6 12 6
ditto.....	73	2 7 6	New Cook's Kitchen..	46	4 3 6
ditto.....	69	3 8 0	ditto.....	38	2 0 0

50 Marke Valley, 15s. 6d 20 Tamar, 15s. 100 Rossa Grande, 2s.
50 Home Trust Security, 100 Kajanga, 16s. 6d. 100 Kit Hill, offer wntd.
21s. 3d. 40 Frongoch Lead, 24s. 50 Drakewalls, offer wd.

BANKERS: ALLIANCE (LIMITED).

ROYAL MINING ACADEMY AT CLAUSTHAL (GERMANY).

71ST SCHOLASTIC YEAR, 1882—1883.

The PRACTICAL PREPARATORY COURSE, and the LECTURES OF THE SUMMER HALF-YEAR, will commence on 3rd April, 1883.

Programmes to be had (gratis) of—

THE DIRECTOR,
BERGRATH DR. v. GRODDECK.

Now ready, large crown 8vo., 18s., cloth (postage 3d.).
HYDRAULIC MANUAL: Consisting of Working Tables and Explanatory Text. Intended as a Guide in Hydraulic Calculations and Field Operations. By **LOWIS D'A. JACKSON**, Author of "Aid to Survey Practice," &c. Fourth edition. Re-written and enlarged.
CROSBY LOCKWOOD and Co., 7, Stationers' Hall-court, London, E.C.

Just published, with numerous woodcuts, 3s. 6d., cloth (postage 3d.).
DETAILS OF MACHINERY: Comprising Instructions for the Execution of various Works in Iron in the Fitting-shop, Foundry, and Boiler-yard. By **FRANCIS CAMPIN**, C.E.
CROSBY LOCKWOOD and Co., 7, Stationers' Hall-court, London, E.C.

Just published, price 2s. (Wesley's Series).
WELLS, AND WELL-SINKING: By **JOHN GEO. SWINDELL** and **G. R. BURNELL**, C.E. Revised Edition. With a New Appendix on the Qualities of Water.
CROSBY LOCKWOOD and Co., 7, Stationers' Hall-court, London, E.C.

Notices to Correspondents

ST. JOHN DEL REY MINE, BRAZIL.—As I, with several of my friends, am about to invest in some gold mines in the neighbourhood of the St. John del Rey Mine, Brazil, will some of your correspondents kindly inform us what is about the total amount of wages and salaries which has been paid by the St. John del Rey Company since its formation; also the amount which has been paid for machinery and plant, also the total weight of gold which has been raised and the total amount of the dividend paid?—**INVESTOR.**

Received.—"Shareholder" (Dolcoath)—"E. W. R." (Lancashire)—"J. J."—"H. T. V. O."—"D. N."—"A. J. S."—"R." (Sheffield)—"N. R." (Dolcoath)—"Shareholder" (Camborne)—"Member" (Geologists' Association)—"D. W. B."—"Shareholder" (Miford Docks)—"Shareholder" (East Chiverton).

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, FEBRUARY 10, 1883.

THE CHEMICAL PROPERTIES OF PYRITES.

At the present time there appears to be a great demand for that peculiar of all metals, pyrites; for from them some of the most valuable of products are obtained by the chemist, whilst they are also required for various other purposes than are sought for in the laboratory. The manufacture of that important material sulphuric acid has increased immensely during the last few years, and only a comparatively small quantity of it has been made direct from the sulphur. The introduction into leaden chambers of sulphurous acid, produced by the roasting of copper pyrites, and also of blende, instead of allowing it to escape into the atmosphere, has been carried on successfully. The sulphur obtained from carburetted hydrogen gas by purification with oxide of iron has been utilised for the manufacture of sulphuric acid; so also has the refuse left from the production of soda been turned into the same article. All those methods are based on the oxidation of sulphurous compounds which are contained in the residuum of soda, the oxidation changing them into soluble polysulphurates and hyposulphides, the latter being decomposed by means of hydrochloric acid, as well as by the liquors containing chlorate of manganese left as refuse from the manufacture of chlorine. But these regenerative processes have been found too costly, owing to the high price of hydrochloric acid. But, after all, it is admitted that the genuine, best, and most economical of raw materials for the production of sulphuric acid is pyrites, the consumption of which goes on rapidly increasing. Copper pyrites are principally imported from Spain and Portugal, the Tharsis Sulphur and Copper Company being the largest consumers. After the copper is extracted from the pyrites, the oxide of iron, which is the residuum, is used in the blast furnaces, as well as for fettling in puddling furnaces. The English production, it may be said, is not one-tenth of what is imported.

Iron pyrites are raised principally in Cornwall, but they are also picked out from the coal raised in several colliery districts, and are known as coal brasses, and as such are sold for about 10s. per ton. However, our makers of acid and other extracts obtained from pyrites, look more to Spain than any other country, the Rio Tinto Company alone now producing about 1,000,000 tons annually, with about 10,000 tons of copper. There are about six miles of tanks employed in the precipitation of copper, whilst at the works upwards of 10,000 persons are employed, and the yearly consumption of pig-iron in effecting the precipitation of the copper is close upon 20,000 tons. The pyrites vary in quality, for whilst the better sorts are sent for the manufacture of sulphuric acid, the poorer qualities are roasted in heaps at the mines for the copper only, and by a new process, which has been considered most satisfactory. The pyrites, being ground, are watered with a solution of ferric chloride, which has the effect of chlorodising the cupreous sulphides, leaving the ferric sulphide undecomposed. The chloride resulting from the precipitation of the copper is perchloridised by the injection of air, for use as the solvent. The result has been that about 10,000 tons of cement are made yearly, while the copper extracted at the works in England and Scotland from the finer qualities makes the total yield, we are told, of this low quality of sulphur ores from 25,000 to 30,000 tons. At the mine alluded to a large reservoir was commenced last year capable of containing 7,000,000 cubic feet of water, at a distance of five miles from the works, and from it the water will be gravitated for washing the calcined and other ores. A sample of the ores gives 49 per cent. of sulphates of iron and 3.10 of copper. With respect, however, to the production of sulphuric acid from these and other pyrites, it may be said that from the leaden chambers to which allusion has been made good practical results have been obtained. In the early experiments it was thought that when not sufficient air was admitted some of the nitric oxide was reduced by the sulphurous acid to a condition of nitrous oxide, and, therefore, lost; but this was afterwards proved to be incorrect, for the reduction, it appears, can take place in the presence of a large quantity of water, for nitric oxide is the substance the least oxygenised when it is formed in the presence of an acid of the density of 1.51, as in that of a more concentrated acid. It is, however, considered important to have an acid of a suitable concentration at the bottom of the chamber from the commencement of the process. Furnaces for roasting are now in use which turn all the sulphur to good account, even in the case of slightly sulphurous ores, allowing of the roasting of the pulverised ores which had previously to be utilised with clay, whilst the oxides of nitrogen are completely retained, and the concentration of the acid more economically effected. In connection with pyrites the production of sulphuric acid is a most important branch of chemistry, for the demand for it grows rapidly, so that our imports of the raw material become much heavier, whilst all that is produced at home is quickly absorbed.

As to the distillation of pyrites or bi-sulphide of iron, it is found in all the mineral deposits as well as amongst the metals, the com-

position being on an average 48 of iron and 52 of sulphur. It is most extensively found associated with copper and nickel, but a good deal is sometimes found along with iron ore. Sometimes they are disseminated in such quantities through the ore as to render it nearly useless, and sometimes there may be a mass of pure magnetite passing out at the sides into copper and iron pyrites. The magnetic pyrites are the most basic of the sulphides of iron, being of a bright bronze colour, and remarkable for its magnetic properties. When heated in a close vessel the pyrites are decomposed and the sulphur is partially separated, but where there is plenty of access for the air the sulphur turns to sulphuric acid, leaving behind a peroxide of iron, and if the pyrites were tolerably pure the former could be used in the blast furnace, and the residuum obtained from pyrites for the manufacture of sulphuric acid is employed in the Cleveland furnaces under the name of "Blue Billy." Iron pyrites when exposed to moist air rapidly change to prosulphate of iron, and when the latter salt is brought into contact with decomposing organic matter to points where the air is excluded pyrites are formed, and in this way it is supposed that the greater part of the pyrites existing in sedimentary rocks has been formed. In the deposits of magnetic ironstone pyrites are commonly met with in more or less quantities, and in one great field in which the central portion is formed of very pure magnetite, yielding from 48 to 50 per cent. of iron, the lodes are charged with copper pyrites in quantity sufficient to be profitably separated by electro-magnetic machines. In the Cleveland district pyrites are found along with ironstone, but in ore worked in the oolites there does not appear to be any formed, at least worth noticing. In several of our seams of coal pyrites are formed, and in Denbighshire there is a bed known as the Brassy coal, and in Lancashire, Durham, Staffordshire, and the West Riding, considerable quantities are picked out. Ireland, however, rather Wicklow, is the principal producer of pyrites in the kingdom. But it is believed that the quantity at home could be greatly increased were more attention directed to the separating of the pyrites from the other material, whilst the price paid looks like a really profitable one. If the pyrites can be exported from Spain at a profit it certainly looks as if they should pay well at home, and that the production should be much greater than it now is.

THE IMPROVED SYSTEM OF COKE MAKING.

Seeing that more than ordinary interest is now being taken in the systems of coke making which have been recently patented, it may be said that in Belgium for some years past the hydrocarbons have been drawn from the coal used for coking in that country. Not only so but Belgium has taken the lead in improving the construction of the ovens, and in the country there are now upwards of 1000 of those erected on the Coppee principle in operation, and a much larger number in Germany. In addition there are the Smet and the Appolt ovens, for which certain specialities are claimed. One of the great advantages of the Belgian ovens is the short time they take for completing the coking as compared with our own beehives. In the former the time occupied is from 24 to 26 hours, whilst the ordinary beehives take nearly 70 hours, and in some instances even more. But in the saving of the hydrocarbons there is more than one system in operation. At the Product Mines we are told that the arrangements for the production of coke are most complete, and at the same time satisfactory. The volatile matter in the coke is found to be about 30 per cent., which it is considered renders the coal too bituminous for coking by the ordinary method; yet it is considered sufficiently valuable to collect the products of the distillation, and this is done in an easy and effectual manner. The ovens that are on the ground are similar to the Coppee ones, and they are loaded from the top and discharged by steam ram engines, and the gases proceeding from them are collected and transmitted in iron pipes to an open air or evaporating condenser. The gases which remain unconsumed are returned in pipes to the front of the ovens and are burnt underneath, by this means supplying the heat necessary to carry on the process of coking, for the coke itself is not permitted to burn, the ovens being perfectly closed from the atmosphere. These gases, which have become condensed, are afterwards re-distilled, the light and heavy oils and ammoniacal acid liquor are separated, and a residue of pitch remains which is used in the manufacture of artificial fuel. This appears to be an excellent system for coals more volatile than are generally used or considered adapted for coke making. Seeing that the coke making in this country is now in an interesting state of transition, any information with respect to what is being done in the same direction in other countries cannot fail to be of interest, and with that object before us we have thought it worth while to direct attention to what is being done in Belgium in which, perhaps, more than in any other country, more has been done in bringing coke ovens to a high state on the road to perfection.

THE MANUFACTURE OF ARMOUR-PLATES.

One of the most thriving branches of the steel and iron trades is the manufacture of armour-plates for vessels of war. It is now confined to two large establishments in Sheffield—Messrs. BROWN and Co. and Messrs. CAMMELL and Co., the chairmen of which are both patentees in connection with the plates. Great changes have, however, taken place in their manufacture during the last year, owing to the experiments that have been made at Portsmouth by the Admiralty officials. Plates entirely of steel have been tested, and some of these, powerfully compressed by hydraulic power, gave good results; but ultimately mixed plates, consisting of a backing of iron 5 or 6 inches in thickness and a plate of steel of nearly the same thickness, have been accepted as the type for future use in our own as well as other navies. Up to a comparatively recent period iron armour-plates were used by all the naval powers, but of a thickness that seriously interfered with the speed of the vessels, whilst the great displacement was also a serious matter. This will be evident when it is stated that some plates made not so very long since for the Italian Government were 24 in. thick. Such heavy plates could be made by either hammering or rolling the best qualities of iron, by making, in the first instance, slabs, and piled one on the other. Rolling, however, has been the system generally adopted at both BROWN's and CAMMELL's. This system consists of rolling balls from the puddling furnace after being shingled to about 1 in. in thickness and in breadth 1 ft. and 2 ft. long. A number of those slabs are then rolled into one of 4 ft. square. Then others are piled on or welded into a plate of double the thickness, and this is continued until the required thickness is obtained. The plates, 2½ in. thick, are rolled to weigh about 30 cwt., and when twice that thickness is required four of the 30 cwt. plates are taken and piled together, reheated in a furnace, and uniformly heated, and the whole, when sufficiently heated, is drawn out with the tongs and run direct to the rolls.

The pile is then run through the rolls backwards and forwards until the required thickness is obtained. The plate in this state and whilst quite hot is made smooth by means of a powerful roll passing over it several times. It is then dressed by a planing machine and then is ready for sending away after being examined by the person appointed for the purpose, for as a rule each Government has a per-

on at the works whose duty it is to examine each plate as it is turned out. The compound plates of iron and steel are those that are now being most extensively produced. The face being of steel that metal is melted and put on to the iron. The steel plate is attached to the armour by distance pieces and screws, leaving a hollow space of some 4 or 5 in. between the iron and steel plate. The whole being heated is placed in a large moulding box, the steel being close to a thick cast-iron plate, the remaining sides being filled with sand and the bottom closed with brickwork. The space between the plates is then filled with the molten steel at the highest possible temperature. When the casting has cooled to a red heat it is rolled to the necessary thickness. Between the two metals there is consequently a layer of steel formed at the junction, the steel facing retaining its full temper. The steel, according to Mr. BAUERMAN, has 0.573 of carbon, 0.617 manganese, and 0.173 of silica. Some of the steel faces are from 5 to 6 in. in thickness, and the iron perhaps rather more. The resisting power is more than equal to an iron plate of twice the thickness.

THE ELECTRO-AMALGAMATION PROCESS.

The practical demonstration of the efficiency of the process invented by Mr. RICHARD BARKER, and now being introduced by the Electro-Amalgamator Company commenced, in accordance with the announcement in last week's *Mining Journal*, on Tuesday, and to judge from the tests made the process seems likely to prove highly successful. That a sound practical opinion might be formed, a complete series of riffle boxes of full working size were provided, a hopper supplied with crushed ore being placed at the upper end to keep up the supply of ore, which on the dressing-floors would be received direct from the stamps. To facilitate comparison, a few shovelfuls of ore were first let run over the table to show its effect upon the mercury used in the ordinary way. As the material used was a Wynaad ore heavily charged with sulphurets, it is needless to say that the mercury was quickly fouled to an extent which almost obscured its surface. The current of electricity was then put on from a small Elmore dynamo, which was specially made for the purpose, and the effect was instantaneous. The surface of the mercury in each riffle box was as bright and clean as though it had been fresh retorted; and although further portions of the same ore continued to be passed over the table, the mercury showed no tendency to foul, even at the end of the trial. As the mechanical stirrers had not been used in the first trial without the electricity, it was suggested that the striking improvement might possibly be due to better mechanical arrangement rather than to the use of the current; everything was, therefore, kept going in precisely the same condition, except that the current was taken off. The result was conclusive in favour of the electro-amalgamator process, for the fouling of the mercury recommenced directly the current was withdrawn, and ceased upon its reintroduction.

The simplicity of the machine could scarcely be greater—indeed, there would be no difficulty whatever in applying the invention to any set of riffle boxes at present in use without stopping the work for more than two hours. The negative pole of the dynamo is connected with the mercury in each of the several riffle boxes, the positive pole being connected with a corresponding series of conductors in the form of wires, plates, bars, or stirrers, as may be found most convenient, but, whatever form of anode may be used, it is kept just out of reach of the mercury, the whole bath of which forms the cathode. In this way the stream of water is made to form the conductor from the anode to the cathode, and the result is, that the mercury is kept in constant agitation, perfectly bright and clean, and in the best possible condition for extracting the smallest particle of gold contained in the stuff under treatment, and irrespective of the presence of impurities which, with well-retorted mercury in the ordinary state, would render the separation of the gold practically impossible. Another great recommendation of the electro-amalgamating system is, that from the action of the current on the mercury the pulverised mineral which is being washed along never obscures the entire surface of the mercury, so that the condition of the mercury can always be seen without stopping the supply of mineral from the hopper or the stamps. The advantage of this is obvious; in the ordinary system the exact condition of the mercury is not constantly visible, and, therefore, the process may be carried on for hours after the mercury has become fouled and ceased to act, the result, of course, being the loss of any gold or silver contained in the ore which has passed over in the meantime.

In the experimental trial on Tuesday, although it was impracticable to pass a ton or two of mineral through the machine, and then collect the amalgam and show the button of gold by cupelling, quite enough was seen to prove that by using the current in the way described the amalgamation was greatly facilitated, and that the use of water as the conductor of the current—the anode being otherwise separated from the cathode—gives vastly better results than when the mercury is used as the conductor, as it usually has been. By the Barker process the superficial area of the surfaces upon which electrical action is going on is largely increased, and the results, as shown by the analyses already published, are considerably higher than those which are otherwise attainable. If similar results be obtainable upon the dressing floors, and there is really no reason why, under the control of a competent reduction officer, the machinery should prove less efficient in India or Venezuela than in Southwark, many mines which are now a burden to their owners will take a respectable position amongst dividend-paying enterprises.

THE LATE MR. ROBERT KNOWLES.—Died, on Jan. 31, at Swinton Old Hall, in the 79th year of his age, Mr. ROBERT KNOWLES, for many years senior partner in the firm of Messrs. Andrew Knowles and Sons, the well-known colliery proprietors of Pendleton and the neighbourhood. Upon the reorganisation of the South Lancashire and Cheshire Coal Association in 1855 Mr. Knowles was elected its first President, and upon several other occasions he has filled the same office; he was one of the oldest members of the Association, and attended its meetings for upwards of half a century. A few years since he retired from active business leaving his coal and paper trade affairs in the hands of two sons, and his cotton trade affairs in the hands of two others. He was the eldest son of one of the greatest commercial men of Lancashire. As regards the coal trade concerns upon his retirement, his place was taken as senior partner by his eldest son, Mr. Andrew Knowles, who is now the Chairman of the company, Andrew Knowles and Sons (Limited), and also as managing director, having as a colleague his cousin, Mr. John Knowles.

PRODUCTION OF GOLD AND SILVER.—From the report of the director of the United States Mint we learn that the production of precious metals throughout the world during 1881 somewhat exceeded that of the previous year. The production of gold in 1881 was of the value of \$107,773,157 and of silver \$97,659,460, whereas in 1880 the figures stood at \$106,436,786 for gold and \$94,551,060 for silver. By far the largest producer was America—gold, \$34,700,000; silver, \$13,000,000, followed in descending scale by Australia—gold, \$31,127,515; silver, only \$227,125. Russia—gold, \$28,551,025; silver, \$473,519. Mexico—gold, only \$989,160; silver, \$25,167,763. Columbia—gold, \$1,000,000; silver, \$1,000,000. Germany—gold, \$232,610; silver, \$5,576,699. Austria-Hungary—gold, \$1,240,808; silver, \$1,303,280. Venezuela—gold, \$2,274,692; no silver. Africa—gold, \$1,993,800. Canada—gold, \$1,094,926; silver, \$68,205. Bolivia—gold, \$72,345; silver, \$11,000,000. Chili—gold, \$128,869; silver, \$5,081,747. Spain—silver, \$3,096,220. The remaining supplies were furnished by Sweden, Norway, Italy, Turkey, the Argentine, Brazil, and Japan. The largest circulation of paper money throughout the world in 1881 belonged to the United States, which had \$793,074,878 value. Next came Russia, \$612,916,209; followed by France with \$512,129,625; Austria, \$299,091,135; Italy, \$293,772,885; Germany, \$211,122,464; Great Britain, \$203,692,764; Brazil, \$188,155,455. The smallest paper calculation was in Central America, which stood at only \$163,347. The largest circulation of gold was in France—\$874,876,000 value; followed by Great Britain, \$592,000,000; United States, \$563,631,455; Germany, \$387,143,742; Spain, \$130,000,000.

Italy, \$144,750,000; Belgium, 103,000,000; Russia, \$119,209,784. The smallest gold circulation was in Peru, which figured at the value of only \$62,085. Less gold was mined in 1881 than in the previous year, but more silver, the numbers standing at (1881) gold, \$136,387,383; silver, \$100,705,824; whereas in 1880 there were gold, \$148,645,236; silver, \$82,397,154. By far the largest mintage took place in the United States—gold, \$96,850,890; silver, \$37,939,203. The next largest mintage of gold was Australia—\$19,699,115, followed by Sweden at \$11,149,950.

MR. J. DICKINSON, CHIEF INSPECTOR OF MINES, ON SAFETY LAMPS.

At the Manchester Geological Society's monthly meeting, on Tuesday, Mr. John Aitken, the President, in the chair, a paper, entitled "Notes on Safety Lamps, and on the Mueseler Safety Lamp and Testing Apparatus at Celynen Colliery, Abercarn, Monmouthshire, introduced by Mr. J. S. Green, was read by Mr. Joseph Dickinson, Her Majesty's Chief Inspector of Mines. In introducing the subject Mr. Dickinson said he thought it was admitted that the first safety lamp had been invented by Dr. Clanny. This lamp, however, depended upon the supply of air having either to be carried with it or be conveyed to it in a pipe, and not upon the atmosphere of the place in which it had to burn. The testing for fire-damp had then to depend upon thin dip candles with small wicks, or a small part separated from a larger wick; and the sparks from flint and steel, which were sometimes struck by the revolving wheel of what was called a steel mill. The grand invention of the Davy lamp, and, the perhaps less important invention of the Stephenson lamp, dated but from 1815. Lamps still bore the name of all these first inventors, that of Davy being still almost identically the same as when originally produced, the others having now but little resemblance to the originals. Mr. John Buddle, the eminent viewer at Wallend Colliery, first introduced the Davy; and Mr. Nicholas Wood, as a young man, was one of the assistants who introduced the Stephenson, under the Brandlings. It was his (Mr. Dickinson's) good fortune to know both of those gentlemen, and to the former, in conjunction with Mr. Sopwith, he was indebted for his start in life after his apprenticeship. He had many times talked with the overmen who acted under Mr. Buddle, and had heard narrated the jealousies which existed respecting the two inventions. Both lamps were received at first with distrust, but the Davy soon became so popular that with the sluggish ventilation and impurity of the mixture then in the mines, it came to be almost implicitly trusted, and was in some instances used for working with when burning fire-damp filled the gauze and with the gauze at dull red heat, requiring relays of cold lamps to be brought in to replace the hot ones.

The records showed that at times this procedure resulted in sad catastrophes. Following upon this state of things ventilation began to be greatly improved, and this was still continuing. But with the improved ventilation the mixture when not thoroughly diluted had become more explosive. The velocity of the currents had been also increased, so that lamps which stood the old requirements well would not stand the new. Many modifications had consequently been introduced to meet the altered circumstances and to give better light. All of them, however, seemed to depend upon the original principles of the Davy and Stephenson, that of the Clanny lamp being still the basis upon which irreparable mixtures might be entered. And with all the drawbacks the Davy was still a great favourite, especially for testing. Amongst the modified lamps was the Mueseler. This gave much more light than the Davy, but it must be kept upright, and the leading principle in its construction was that it would go out in an explosive mixture. Like the Davy, the Mueseler in its turn came into Belgium, to be rather blindly relied upon. The dimensions for the lamp, published in the Belgium Code of Mining Laws in 1846 were, however, found not to ensure safety, and they were altered in the Supplement, which was published in 1852. The changes then made applied chiefly to the size of the glass and the chimney. Even with the alterations it was now being found that the lamp was not altogether reliable, especially when an explosive mixture came upon it in a slanting direction. In the Celynen Colliery, of which Mr. Green was the manager, the mine made gas freely, and as the levels there were not driven out to the extremities before active working of the coal was commenced, the gas had to be dealt with in large quantities, which were drained from numerous and large surfaces. Hence the necessity of a lamp on a reliable principle, and of a reliable means of testing that each lamp was secure. During the course of these testings it had been found that in certain respects the principle of the lamp was not secure, and it was the two improvements which had been made to rectify this that he had now brought it before the Society. He had only to add that it was in August last, when he had occasion to visit the colliery, that the improvements and method of testing came under his notice, and he was so impressed with their importance that he asked Mr. Green to send him an account of them, and to make them public, one result of which had been his obtaining for the Society a brief but practical communication from Mr. Green upon the subject. With this communication Mr. Green had also forwarded sketches of the Mueseler lamp and testing apparatus, which when they came before the members would be found of considerable interest; and Mr. Green added that the papers and discussions on safety-lamps at the Manchester Geological Society's meetings were so interesting and instructive that they could not tend but to afford a better knowledge of a "safety" lamp to all who would run and read. In describing what had been done at the Celynen Colliery, Mr. Green stated that the Mueseler lamp was adopted in February, 1879. At first the workmen were unfavourably disposed towards using these lamps, but as they became aware of their greater safety, as compared with the Clanny, they valued them accordingly. The following were the sizes, &c., of the lamps, as specified to the manufacturers:—Glass, exterior diameter, 2.36 in.; thickness, .21 in.; height, including socket, 2.44 in.; chimney (of thin iron), interior diameter at top, .39 in.; ditto at base of bell mouth, 1.18 in.; diameter at top of bell mouth, .98 in.; height above horizontal gauge or disc, 3.54 in.; below ditto, 1.06 in.; bell mouth widening at base, .23 in.; distance from base of chimney to top of wick tube, .86 in. Each lamp was tested in a box erected over the counter in the receiving room before it was handed to the workmen. Gas and air were turned in at one end of the box, about half-a-dozen lamps being tested together. Safety shutters were fixed in the roof of the receiving house, and a sliding door in the wall separated the same from the lamp-house, so that accidents might be prevented when explosions occurred.

It having been found that under certain conditions gas continued to burn underneath the disc or horizontal gauze, after the flame on the wick had discontinued burning—a thin streak of flame revolving around at the base of the tube—a small projection of tin was affixed to the tube which effectually prevented it. This improvement to the lamp, with the addition of a shield about 2 ins. in depth around the bottom of the top gauze and resting on the top ring over the glass, rendered the lamp unexplosive under all probable conditions. When sudden outbursts of gas had taken place in this mine the safety and reliability of these lamps had been proved on two or three occasions. Great care should be taken by users of Mueseler lamps that the tube was not too long or too large at the top, and that the horizontal gauze or disc was carefully fixed on the tube. Persons were undoubtedly wrong who asserted that the practice of testing safety lamps at the banks by means of the explosive mixture of gas and air, which he (Mr. Green) employed was useless and misleading. Damaged lamps had purposely and inadvertently been exploded in the testing apparatus at this colliery. The testing apparatus at the Celynen Colliery was described by Mr. Green as follows:—Size of fan 1 ft. 9 in. diameter, 5 in. outlets; number of revolutions per minute, 500; diameter of gas pipe, 1½ in.; diameter of pipe for air and gas, 4½ in.; length of pipe for air and gas 12 ft. 6 in.; testing box (inside measurement) length, 5 ft.; height, 1 ft. 2 in.; breadth, 6 in.; upcast pipe (wood), 5 in. by 7 in.

The CHAIRMAN observed that nothing could be more important than the introduction of a perfectly safe lamp into mines. If the lamp described by Mr. Dickinson accomplished this object, it was one of the most important inventions which had been introduced into practical mining for some time past.

Mr. WILD said reference had been made to the fact that a slanting

current of explosive mixture would explode a Mueseler. The shield which had been added would no doubt add greatly to the safety of the lamp; but a source of danger in these lamps was produced when the chimney was carried too near to the top.

Mr. WILLIAMSON (Staffordshire) said he had had to deal with safety lamps for 50 years, more or less. He remembered the Davy and the Stephenson lamps in very much different form to those at present in use. Some years ago he was impressed with the necessity of a better lamp than they then had in use, and he made it his study to discover whether it was not possible something might not be done to effect an improvement. Five or six years ago he set to work and constructed a safety lamp. His idea then was to make the lamp as near as possible like those then in use, and to avoid the introduction of complicated parts whilst securing a better light. The lamp he constructed was a combination of the Stephenson and the Clanny, and, so far, he had every reason to think, with further improvements which he had made, that the lamp was practically a safe one. One objection which he took to the Mueseler was, that it had only a single glass, and that, if anything happened to this glass, it would be fatal in the event of the lamp being in an explosive mixture. In his (Mr. Williamson's) lamp there was a double protection in this respect. He could see that the improvement made in the Mueseler lamp by Mr. Green was a very important one, and there was no doubt that the lamp could be made almost perfect. He thought that the Mueseler lamp was a good one, but great objection had been raised to it because it was liable to go out when not in the perpendicular. Apart from this, he considered that the Mueseler was a simple and a good lamp. He thought, however, that a great deal depended upon how the men used their safety-lamps. In his opinion, a great many explosions had taken place on account of the defective make or construction of lamps, and he had seen lamps sent out that were not fit to go into a mine.

Mr. DICKINSON, in replying to a question, said the additional casing was not an original part of the Mueseler, but there was no objection to its introduction, providing it did not add to the danger of the lamp going out, which was already a great objection to its use with many people.

A vote of thanks was passed to Mr. Dickinson for his paper, and the subject then dropped.

Mr. G. H. MORTON, F.G.S., read a paper "On the Strata between the Carboniferous Limestone and the Coal Measures in Derbyshire and Flintshire," which was followed by a short discussion, and the meeting then closed.

SOUND INVESTMENTS.

The lifelessness and depression which characterised the Stock Markets at the close of last year continues, and investment business is almost entirely at a standstill. So far as the English market is concerned, it is impossible to discover any circumstances to justify the present state of stagnation, but unfortunately external influences have prevailed, and between the political disturbances in Paris, and the tantalising vagaries of the New York markets, as evidenced by the confusing daily telegraphic advices from that city, an unsettled feeling has been created here, and all securities have naturally been neglected. Until the horizon has been cleared of these clouds, it is unlikely that any great activity will be witnessed, but with a settlement of the troubles in France, and the merest sign of the long-looked-for revival in America, there is not the least doubt that confidence will be restored and considerable buoyancy imparted to our markets. All the present indications are in favour of a rise—money is plentiful, trade (with the exception of one or two industries) although not very brisk, is certainly by no means unsound, no new issues of securities of any amount have lately been offered to the public, and beyond this there is reason to believe that in many departments speculative accounts for the fall preponderate. Times of depression such as we are now passing through have occurred before, which have almost invariably been quickly followed by periods of great activity, and unless any unforeseen events arise, the spring months of this year should bring with them a general revival in business.

GREAT WESTERN RAILWAY.—The payment of a dividend for the past half-year at the rate of 7½ per cent. per annum, when 7½ per cent. had almost universally been expected, caused some disappointment, as the increased weekly receipts had encouraged hopes of a higher distribution. An explanation upon this point was given at yesterday's meeting. During the past month a fall of 7 per cent. has taken place in the price of this stock. Upon any further reaction I think investors may again safely direct their attention to it.

LANCASHIRE AND YORKSHIRE RAILWAY.—The dividend for the past half-year at the rate of 5 per cent., as compared with 5½ in 1881, has caused much disappointment, and it again places the Lancashire and Yorkshire in the unenviable prominent position of showing the greatest retrogression amongst the leading "heavy" English lines. As I pointed out last month, a steady deterioration has been going on since 1871, when an amalgamation with the London and North-Western was on the eve of being carried, the basis of which was that Lancashire and Yorkshire Ordinary Stock should be entitled to ½ per cent. more dividend than North-Western. If such was the estimate of their relative values then, and we now find Lancashire and Yorkshire Stock fallen from 155 to 128, while North-Western has advanced from 145 to 175, it is scarcely surprising that great discontent should prevail. Many communications have been addressed to me by proprietors during the month as to the unsatisfactory state of this railway as compared with its neighbours, and it is remarkable that nothing should have been done by them long since to bring about a change. Shareholders, however, rarely seem to realise the authority they possess, and even if they do they are as a rule so averse to oppose their directors that they apparently prefer to suffer in silence rather than enter into a conflict. That they do possess a power, however, and one which can be exerted by themselves for the good of their property, has been abundantly proved over and over again, and notorious instances of this have come prominently under my own notice—in the London, Chatham, and Dover Railway, and the Grand Trunk and Great Western Railways of Canada. In these companies shareholders combined for their own benefit, and practically carried measures which never could have been accomplished unless they had taken the initiative.

It is apparently agreed on all hands that the administration of this railway is not what it should be; that the retrogression during the past 12 years, while other leading lines have advanced in prosperity, is not explainable by any special or exceptionally adverse events with which it has had to contend; and that its natural advantages should entitle it to take the very highest position amongst English railways. If, as my correspondents' communication indicate, such views generally prevail, shareholders should bestir themselves, and give expression to their opinions on the subject at the forthcoming meeting. An earnest and united effort on their part cannot fail to be productive of much good, and I should therefore advise all who can to attend the meeting on the 21st inst. As there is every probability of an interesting and animated discussion, it is my intention to be present, and I hope to be in a position to make certain suggestions calculated to benefit the property.

MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE RAILWAY.—The recent dividend of 4½ per cent., comparing with 4 per cent. last year, must, so far, be regarded as satisfactory, as it shows an improvement, while other English railways have remained stationary or have receded in position. Shareholders will, no doubt, attach much importance to the following statement of the Chairman at the last meeting:—

"When I see the great railway companies extending themselves wherever they can, it makes me reflect with regard to the future. It seems to me that railways like our own must either have a tendency to absorption, amalgamation, or extension."

The contingency of any extension of this system being, to say the least, improbable, the alternative of "absorption or amalgamation" becomes more prominent, and shareholders may therefore, I think, patiently await the course of events.

GREAT EASTERN RAILWAY.—A slight advance in this stock has recently taken place owing to the payment of a dividend of 4½ per cent., as compared with 4 per cent. last year, thus confirming the views which I expressed a month ago in opposition to those generally prevailing. Since the time when I recommended investments in the stock at the price of 48 and upwards, the progress of this railway has been steady and continuous, and I have no doubt its future will be equally so. The time is not far distant when I confidently anticipate the price will advance to par.

NORTH STAFFORDSHIRE RAILWAY.—In respect of increased dividend, diminished working expenses and freedom from new capital commitments, this compact railway occupies a unique position amongst English lines at the present time. This is an attractive stock, not only because of its improving dividend-yield, but from the certainty of the ultimate absorption of the company by one of its powerful neighbours on such terms as will give a handsome profit on current quotations.

CANADIAN RAILWAYS.—With this circular I publish a separate list of bonds and stocks of the leading Canadian railways (together with some other securities), showing their exact position and yield to investors at current quotations. They are all, in my opinion, well worth attention.

GRAND TRUNK RAILWAY OF CANADA.—With the exception of a rise of 3 per cent. in the First Preference, the stocks of this railway remain almost unchanged since the beginning of the year, notwithstanding that during the five weeks ending Feb. 4, and despite the traffic being "seriously interrupted by snow and continued severity of the weather," the increased earnings have amounted to 57,555. It is a remarkable fact that the Third Preference and Ordinary Stocks should now be much lower in value than in October last, although the progress since that time has exceeded the most sanguine anticipations. Since the date of the fusion the receipts have been augmented by no less than 351,583, or an average of 14,063, per week; no adverse event whatever has intervened, and yet the stocks mentioned have fallen from 63½ to 60½ and from 29½ to 27½ respectively. In view of current earnings and the prospects of continued progress during the year, with reduced working expenses, there can be no doubt as to these securities being improving investments, and a careful consideration of the position convinces me that sooner or later a substantial advance in quotations will be witnessed. It is expected that the dividends to Dec. 31 last will soon be announced. If 3½ per cent. should be paid on the Third Preference Stock, I think that an appreciable rise would be established, while a 4 per cent. dividend would cause a rapid advance to 68 or 70. Two years ago, when this stock received only ½ per cent., and hopes of fusion were almost abandoned, the price advanced to 56½, and the Ordinary to 26½. With "fusion" accomplished, receipts immensely increased, and all conditions favourable for the profitable working of the combined systems, shareholders may, I think, confidently await the future, and investors generally may direct their attention to these securities with the almost certainty of realising a handsome profit at no distant date.

MEXICAN RAILWAY.—Since the publication of my recent special circular, which dealt very fully with the merits of these securities, no new features have transpired except that the past week's traffics have increased by 8000, or a total of not less than 30,800, for the five weeks since Jan. 1. It is a remarkable fact that at the very moment of their being so much excitement here in consequence of the rumours that this company would be called upon to reduce their rates, and that the new American lines would conduce to that end, a notice appeared in the Mexican Government official newspaper announcing certain arrangements with the "National" line, and adding "increase of tariffs has been agreed upon." The arrival in Mexico of the British Consul at Havana, "to ascertain what is required to develop British trade with Mexico," and to "take steps to facilitate a renewal of the diplomatic relations between England and Mexico," cannot fail to have a beneficial effect upon the country in which this property must participate.

NEW YORK, ONTARIO, AND WESTERN RAILWAY.—The decline in this stock to 27 is due to the fact that the opening of the through line to New York has been postponed to May 1, by which date the traffic on Lake Ontario will be resumed. This railway will have the very best outlet in New York for transshipping cargo, its facilities in this respect excelling even the New York Central. These shares are very cheap.

NORFOLK AND WESTERN RAILWAY.—Owing to a rumour that the directors contemplate applying the past quarter's dividend on the Preference Stock to the improvement of the line, and thus to reduce the amount of capital required for new works in progress, a fall in quotations has taken place. I understand no decision has been come to at present on this subject, and that the business of this railway is progressing so satisfactorily, that there is no real justification for the reaction in price.

TRAMWAYS.—The accompanying list gives particulars of the tramways now worth buying.

TELEGRAPHS.—The reports just issued by the Anglo-American and Direct United States Companies are certainly the most satisfactory the proprietors have received for some time, the large reserve funds of both being very encouraging features. The opening of the independent office in New York, of which I gave notice last month, is expected to have beneficial results, and the fear of competition being now removed investors may with safety give attention to these securities.

TELEGRAPH CONSTRUCTION AND MAINTENANCE.—This prosperous and well-managed company has again declared a dividend of 15 per cent., making 20 per cent. for the year. The recent decision to amend the Articles of Association, enabling the company to take up the business of electric lighting, should be productive of good. It will be remembered that some time since I recommended the directors to take the necessary steps to that end, and I think they are to be much commended for their cautious policy, as by the delay they have gained experience to the manifest advantage of the company.

INDIAN GOLD MINES.—The prices to which these shares have fallen would almost indicate a belief in their ultimate success had been abandoned. Yet, as a matter of fact, the latest reports from India have been favourable; while the results of the Phoenix, Glenrock, and South-East Wynaad crushings, recently announced, are pronounced by competent authorities as decidedly good. It is clearly established that gold exists in India, and mining and engineering skill will surely be able to extract it in paying quantities. It seems to be the fate of all gold mining enterprises to go through a preliminary period of depression. It was exactly so in the case of Australian mines, and it was well known that when the turn came, shares, which had been quoted nominally at 1s., quickly commanded a value of many pounds. In buying Indian gold mines at current low quotations, the full extent of possible loss can be gauged. On the other hand, there is, of course, the probability of very considerable profits being realised.

LA PLATA MINING AND SMELTING.—The report by the accountant, who has visited Leadville on my behalf, will be dispatched from New York this week. Immediately on its arrival here I shall publish it amongst the proprietors, and call a meeting. Believing as I do in the value of this property, the great object I have in view is to get it completely under English control, and with the assistance of the shareholders I hope to succeed.

CANADIAN COPPER AND SULPHUR.—A meeting has been called for the desirable object of reducing the nominal value of the shares so as to get rid of the present debit to profit and loss account. With the improving prospects, I think there is now hope of a dividend being earned this year.

BANKS.—My usual analysis of the balance-sheets of the Joint-Stock Banks of London was published on Jan. 27. A study of the figures in this analysis cannot fail to be very instructive to holders or contemplating purchasers.

—From Mr. WM. ABBOTT'S Circular for February, 16, Tokenhouse Yard, London, E.C.

CALIFORNIAN AND EUROPEAN AGENCY.
69, MONTGOMERY STREET, SAN FRANCISCO, CAL.
J. JACKSON, Manager

The LISTS will CLOSE on SATURDAY, the 17th inst. for LONDON, and on MONDAY, the 19th inst. for the COUNTRY.

The Rio Sil Mining Company (Limited).

Incorporated under the Companies Acts of 1862-1880.

CAPITAL £350,000, IN 350,000 SHARES OF £1 EACH,

Of which 300,000 are to be issued as Fully Paid Ordinary Shares to the Vendor of the Concessions as the consideration for the purchase, and 50,000 are created as Preferred Shares, bearing a Preferential Dividend of 10 per cent. per annum,

and in addition, taking their *pro rata* proportion of all profits after the Ordinary Shares shall have in like manner received 10 per cent. per annum. Each class of Shares is entitled to have any deficiency short of 10 per cent. per annum made good out of subsequent profits; but the Preferred Shares will in any event be entitled to a cumulative dividend of 10 per cent. per annum. If in the course of five years from the 31st December, 1883, the Preferred Shares shall have received Dividends equivalent to the whole amount paid-up thereon, all distinctions between the two classes of Shares will cease.

ISSUE OF 50,000 TEN PER CENT. PREFERRED SHARES,

on application; 5s. on allotment; 5s. on 30th April, and the balance as required. Applicants for Shares have the option of paying up in full on application.

DIRECTORS IN SPAIN.

His Excellency DON FERMIN ABELLA, General Secretary of the Household of H. M. the King of Spain.
Señor DON GUILLERMO O'SHEA, of the firm of O'Shea and Co., Bankers, Madrid.
Señor DON EMILIO DE ALVEAR, of the firm of José Maria Aguirre, Bankers, Santander.

DIRECTORS IN ENGLAND.

EDWARD J. HALSEY, Esq., 77, Cornhill, E.C., Director of the Midland Railway of Canada.
FREDK. SIMPSON-BAIKIE, Esq., 78, Onslow Gardens, South Kensington, S.W., Director of the Bengal Mills Company (Limited).
*JOHN TAYLOR, Esq., 1, Claricarde Gardens, W., Director of the River Plate Trust Loan and Agency Company (Limited).
CHARLES TOTTENHAM, Esq., Beachfield, Isle of Wight, Director of the Varna Railway Company.
(With power to add to their number). * Mr. Taylor will join the board after allotment.

MERCANTILE AGENTS.

Messrs. REDFERN, ALEXANDER, and CO., 3, Great Winchester Street, E.C.

BANKERS IN LONDON.

THE LONDON AND WESTMINSTER BANK (LIMITED), Lothbury, E.C., and Branches.

BANKERS IN SCOTLAND.

THE COMMERCIAL BANK OF SCOTLAND (LIMITED), Edinburgh, and Branches.

SOLICITORS.

Messrs. CROSLY and BURN, 13, Moorgate Street, E.C.

AUDITORS.

Messrs. OGDEN, BOWES, and CO., Chartered Accountants, 6A, Austin Friars, E.C.

SECRETARY AND OFFICES.

J. H. DUNCAN, Esq. (of Messrs. J. H. Duncan and Co., Public Accountants), 4 COPTHALL BUILDINGS, E.C.

This company is formed for the purpose of acquiring and working certain mining concessions in the provinces of Leon and Galicia (N.W. Spain) more particularly described in the agreements, and also for such other purposes as are specified in the Memorandum of Association.

These mines, consisting of rich auriferous gravel, were worked with slave labour for several centuries by the Romans, prior to their expulsion by the Visigoths. In the writings of Pliny (*vide lib. xxxiii., cap. 21*), it is stated that the Romans annually drew from the mines of this district upwards of 20,000 lbs. weight of gold, or, say, about £1,000,000 sterling. Although they worked on such a large scale for so many years, the quantity of gravel washed by the Romans is very trifling when compared with the whole deposits.

The railway from Palencia to Orense and Corunna, in course of construction and nearly completed, runs through the property, bringing the mines within 50 hours of London by rail.

The process of hydraulic mining introduced of late years in California, and but little known in Europe, has almost entirely superseded the necessity for hand labour, enabling vast masses of earth of very low average grade to be treated with profitable results. In fact, it is free from most of the risks and uncertainty attending gold quartz or underground mining operations.

Mr. W. S. Welton, an hydraulic mining engineer of great experience, who has successfully opened up similar mines in the United States of America, has just returned from an inspection of the property, in which he was accompanied by Mr. J. T. P. Pechey and Mr. C. O. Rogers, well known in connection with the management of hydraulic gold operations in Colombia and California, who fully confirm his report, upon which the directors rely.

Mr. Welton states that the conditions for hydraulic mining on the property are exceptionally favourable, and that the "ditches" constructed by the Romans for conveying water to some of the deposits are of immense extent, indicating, together with the debris remaining, very extensive operations; several of these ditches, he adds, can be utilised for the purposes of the company at a comparatively small outlay.

The total area included in the purchase comprises about 5000 hectares (equal to about 12,350 English acres), and as some of the principal deposits are estimated to be of exceptional depth, the property may be considered as practically inexhaustible.

The concessions are held direct from the Crown at an annual rent of 20 pesetas per hectare (about 6s. 6d. per acre), payable only as and when the surveys are made and concessions perfected. About 1000 hectares are already surveyed and the titles in the possession of the vendor, the remainder being reserved.

ing 4000 hectares having been "denounced," and awaiting only the convenience of the Survey Department officials to complete.

The directors anticipate that they will be able to commence winning at the Astorga deposit by the end of June, the total outlay of these first works being estimated by Mr. Welton not to exceed £12,000.

According to the statistics of working the maximum cost of washing auriferous gravel at certain well-known hydraulic mines does not exceed 2½d per ton, all expenses included, and Mr. Welton in his report states:—"I am justified in estimating that the gravel (at Astorga) would give an average production of 1s. to 2s. per ton." The published reports of two hydraulic mines in California, the "Iowa Hill" and "Independence Hill," show large profits from gravel not exceeding in gold contents 3d. per ton.

Taking the average production at 1s. as the basis of calculation, together with the average amount of work done by 1000 in. of water, as shown by the reports, this portion of the property alone should pay a dividend of upwards of 25 per cent. per annum on the entire capital.

Full reports on the property by Mr. W. Sowerby, C.E., F.G.S., and Mr. Welton, together with further exhaustive and interesting reports on the district by the following gentlemen, can be seen at the offices of the company:—

DON JOSE G. LASALA, Chief Mining Engineer and General Inspector of Mines for the Spanish Government.

O. PRESSER, Esq., M.E., Glasgow.

DON O. A. DE SOTOMAYOR, Mining Director, &c., Granada.

BARON D'USSIER, Ingenieur des Mines, &c., Paris.

MONS. H. LANDRIN, Ingenieur des Mines, &c., Paris.

The vendor (who is the promoter of the company), has agreed to indemnify the company against all the expenses up to allotment, including the expense of engineers' reports, maps, plans, legal printing, and advertising expenses, in consideration of receiving 2 per cent. on the capital.

The remainder of the money subscribed will be available for the purposes of the company, as the vendor takes his entire purchase-money in Ordinary Shares, which receive no dividend until the Preferred Shares shall have received 10 per cent. per annum on the amount for the time being paid-up.

The contracts entered into consist of the following: Contracts dated respectively the 21st September, 1882, the 19th November, 1882, the 3rd January, 1883, and the 3rd February, 1883, all of which are made between the Sociedad Minera y Metalurgica de España of the one part, and Richard Pennelly of the other part; a contract dated 27th January, 1883, made between the said Richard Pennelly of the one part, and John Henry Hill Duncan on behalf of the company on the

other part; and a contract dated 31st January, 1883, made between Redfern, Alexander, and Co., and the company; all of which contracts, with the Memorandum and Articles of Association, may be inspected at the offices of Messrs. Croslie and Burn, 13, Moorgate-street, the solicitors of the company.

In cases where no allotment is made the deposit will be returned in full. In the event of the number of shares allotted to any applicant being less than that applied for, the surplus of the deposit paid on application will be credited towards the amount payable on allotment.

Applications for shares may be forwarded, together with the deposit of five shillings per share, either to the bankers of the company, the London and Westminster Bank (Limited), the Commercial Bank of Scotland (Limited), and any of their branches; or to the secretary, at the offices of the company, 4, Copthall Buildings, London, E.C.

Prospectuses and forms of application may be obtained at the offices of the company, or from the company's bankers.

THE RIO SIL GOLD MINING COMPANY (LIMITED).

Issue of 50,000 Preference Shares of £1 each.

FORM OF APPLICATION.

To be retained by Bankers.

TO THE DIRECTORS OF THE RIO SIL MINING COMPANY (LIMITED).

GENTLEMEN,—Having paid to your Bankers the sum of Pounds Shillings, being the deposit of 5s. per share on application for Preferred Shares of £1 each in the Rio Sil Mining Company (Limited), I request you will allot me the said shares upon the terms of the Memorandum and Articles of Association of the Company, and I agree to accept such shares, or any smaller number which may be allotted to me, and to become a Member of the Company in respect thereof, and I authorise you to register me as the holder of the said shares.

Name in full
Address
Occupation
Date
Usual Signature

(If the Applicants wish to pay up in full their shares on allotment the following additional form must be signed.)
I desire to pay up the shares which may be allotted to me in full on allotment.

Signature

FOREIGN MINES.

ALAMITOS.—Jan. 31: In the 20, driving west of San Martin's shaft, the lode is small, with good stone of ore; worth ½ ton per fathom. The 20, driving east of San Martin's shaft, is laying open a good length of fairly productive ground; valued at 1 ton per fathom. The lode in the 60, driving east of San Felipe's shaft is small, and not opening up ore ground of value at present. In the 40, driving in the same direction, the cross-cut, not having discovered any lode, is suspended. In the 60, driving east of San Enrique's shaft, a great length of rich lode was laid open in the past month, worth 2 tons per fathom. The lode in the 130, east of Taylor's engine-shaft, is large, yielding fine lumps of ore, valued at ½ ton per fathom. The 130, driving west of Taylor's engine-shaft, has laid open a good length of productive lode, yielding 2 tons of ore per fathom. The lode in the 80, driving east of San Victor's shaft, is large, but does not contain any ore at present. In the 80, driving west of San Victor's shaft, the lode is strong and regular, but does not contain enough ore to value. In the 80, south lode, driving in the same direction, there is a good lode in the bottom of the driving, worth ½ ton per fathom, but the upper part is poor. The lode in the 80, also driving to the west of San Victor's shaft, having been unproductive for some time, the driving is temporarily suspended. The 70, driving in the same direction, continues unproductive; the men are put to cross-cut towards the west lode. In the 60, driving east of Judd's engine-shaft, there is no improvement. Vidal's winze, sinking below the 50, will be holed in the 60 in the coming month. The lode in Escobar's winze, sinking below the 70, is regular and yielding good stones of ore, worth ½ ton per fathom. Ogay's winze, sinking below the 50, is going down in very productive lode, valued at 2 tons per fathom. The usual quantity of mineral was delivered into the stores during the past month, and the stoves are producing fairly well at present. The works at surface are kept on very steadily, and the machinery is in good condition. We estimate the raising of company's ore for February at 200 tons. The tributaries returned 19½ tons in the past month.

ALMADA AND TIRITO CONSOLIDATED SILVER.—J. H. Clemen, Jan. 6: Providencia Drift: The ore chute did not continue north; the back is not so good as when last reported, 5 tons per cubic fathom being about present value. The drift, west of main lode, Tirito, is nearly parallel to the lode. We have abstained from saying much about this exploration to avoid raising false hopes. We have, however, now traversed an ore chute 30 ft. long, which averages 4 ft. wide, very near to the intersection of north slide with the lode. We do not telegraph this new development because we do not remember at what height the Providencia stope was stripped on the western side and reached this ore. We are of the opinion that this block is of considerable size. The contained ore is light, and the ground may be valued at 6 tons per cubic fathom. More would be known about this chute, but this is one of the points whose cleaning out has been delayed through the difficulty of obtaining good labourers. This difficulty is one of the consequences of the late (Indian) war. We are happy to inform you that there is now a decided improvement in this matter. The minor explorations on the south continuation of Virgeu continue to open up small and dry, but still remunerative blocks. The communication from 100 feet drift, Mina Grande, is stopped upwards we can connect with this winze much more rapidly and cheaply than with the shaft. For a series of reasons the winze is preferable for the time being to the shaft; it is also a true exploration, whereas the shaft is only a working facility. The back of the main stope, Mina Grande, still shows solid milling ore. We value it at 18 tons per cubic fathom. We believe this back to be thin. Mining at this particular part is tedious. We are

cutting away isolated pillars in an enormously wide lode full of atle.—Reduction Works: The stamps are doing excellent duty, about 48 tons per day, and the four furnaces are roasting about 38 tons per day.

ARUBA.—J. Jewell, Jan. 27: Within one year from the date we may commence mining operations properly, very handsome profits will begin to accrue from mining and treating ore to be got out of the mines. I estimate that an additional outlay of 4000l. will be amply sufficient expenditure during that time. Quite apart from the proposed mining and milling of ores, I find an accumulation of refuse and tailings close to the mill of from 4500 to 5000 tons in weight, which I have carefully sampled and assayed, and as none of my assays showed less than 18 dwts. of gold to the ton, I have now doubt a large amount will be realised by their concentration and sale in England. A sample of some of the ore taken from the 4 ft. wide vein at the bottom of California shaft, at Calabazas Mine, which is already 91 ft. 6 in. deep from surface, assays 27 ozs. 1 dwt. 20 grs. of gold, and 24 ozs. 4 dwts. 5 grs. of silver to the ton. Assays of nine other samples from bottom of said shaft and three samples of the concentrated tailings show fully 9 ozs. to the ton.

ASIA MINOR.—J. W. H. Escherich, F. J. C. Munchel, December Report: District I., Level I. (Arthur): Total stopings, 1 ton per fathom.—Level II. (Hamburg): Total stopings, 2½ to 3 tons per fathom.—Level III. (Petrie): Total stopings, 1 to 1½ ton per fathom.—Level IIIA. (Ancient Air Shaft): The assay referred to in our last showed but 46 per cent. of lead, and only traces of silver. At the beginning of the month the direction of the driving was altered more towards the north with a view of cutting the lode.—Level IV. (Savalan): Rise No. 4 to Level VI. was begun on Dec. 1, the object of which was to obtain better ventilation, to prepare new stope, and to send down the ore derived from the upper parts. Total stopings in this level, 2½ to 3 tons per fathom.—Level V. (Durfield): Total stopings, 2 to 2½ tons per fathom.—Level VI. (Durfield A): Total stopings, 2 to 3 tons per fathom.—Level VII. (Hadji Harous): Total stopings, 2½ to 3 tons per fathom.—Level VIII. (Genosse): The winze begun in November reached Rise No. 3 from Durfield on Dec. 11, and thus good ventilation is secured for Durfield A and Genosse levels.—General Remarks: Total production, 158½ tons in 26 days, against 96 tons in 25 days in November. The new dressing-floors were to commence working on Jan. 1, but severe frost has so far interfered, and in consequence we are about heating the jigger and buddle-rooms, which may probably be finished by Jan. 25.—Weather: The weather at the new dressing-floors ranged during the month from 11½ per cent. to 21½ per cent. Fahr. Snow commenced to fall on Dec. 15, and has since remained, but more heavy weather set in with January.

BELT COPPER MINES.—R. Archibald Brand, Jan. 18: Since my last report I have begun sinking Butler's shaft, and am now down about 7 ft. We are under the vein to avoid water, but the vein in the back looks as well as ever. In No. 1 level east no change to report; good stamp work still on hanging-wall. In No. 2 level east the epidote on the footwall of the vein has made a large bunch or rise in the vein and is very rich in both heavy and light stamp work. In No. 2 level west I am glad to report that we have at last got the vein rich in good heavy stamp work. Altogether the whole workings on the Butler vein look well.—Knowlton: I have now got steam-pipe into shaft, which looks well, and this morning the copper towards the hanging-wall is heavier than we have had for some time.—Compressor: Pipes are now laid to Knowlton shaft, to bottom of Butler shaft, and along 1st level.

BEISBERG LEAD.—Wm. T. Glascock, Feb. 6: I am pleased to say the lode in the 10 metre level, and going south-east, is much improved in size, being now 4 ft. wide with lead intermixed throughout, worth fully 20 cwt. per fathom. Price for driving 40s. per fathom. This end is opening up very valuable ore ground for stoping. The lode in No. 2 winze is 2 ft. wide, worth 15 cwt. of lead per fathom, and a little easier for sinking. We have not yet resumed the sinking of the shaft, but shall commence in a few days. Have ordered a pump, so as to be ready to commence sinking as soon as the water takes up a little more. I purpose driving a cross-cut at the bottom of the shaft, so as to intersect the lode at a greater depth.

BRATSBURG COPPER.—John Daw, Z. Daw, Feb. 3: Murchison's shaft is sunk 12 fms. below the 25; the lode is 3 ft. wide, composed of quartz and rich

copper ore, worth for the latter 13s. per fm. In the 25, east of this shaft, the lode will produce 13s. worth of ore per fathom. The 25 west has fallen off in value, but this is only temporary; present value, 8s. per fathom. In the rise in the back of this level the lode is 4 ft. wide, and will yield 15s. worth of ore per fathom. The four stopes working in the back of the lode will produce 14s. worth of ore per fathom each. The three stopes working to the west of York's shaft will yield 13s. worth of ore per fathom each.—Daw: In the 8 driving west the lode is 2½ ft. wide, worth 13s. per fathom. The five stopes working to the west will yield 14s. worth of ore per fathom each; the lode here is yielding very satisfactorily.—No. 3 Adit: The lode is 2½ ft. wide, composed of quartz and copper ore, worth 12s. per fathom. The two stopes working in the back are worth 12s. per fm. each. The lode in No. 2 adit is improved; now worth 13s. per fathom. In the rise in the back of this level the lode will produce 15s. worth of ore per fathom. The five stopes working in back are worth 12s. per fathom each. In the No. 3 adit, driving east from the bottom of the winze, the lode is worth 6s. per fathom. The three stopes working in bottom of No. 2 will yield 13s. worth of ore per fathom each.—Johanne's Lode: In the end driving east the lode is 4 ft. wide, and will produce 13s. worth of ore per fathom. The four stopes working in the back will yield 14s. worth of ore per fathom each. We have had the weather very much against us during the past month for our outdoor work, snowing nearly every day. This makes the roads bad for getting the heavy parts of the machinery to the mine. We have now full 5 ft. of snow. We have sent the remainder of the ore by steamer (Odin) to Newcastle—705 bags.

CANADIAN COPPER.—Francis Bennetts, Jan. 18: I beg to report that the vein in the No. 7 shaft, sinking under the 40, is about 4 ft. wide, and looking well. The vein in the 35, west of this shaft, is about 3 ft. wide; a little slate mixed with the ore. The vein in the 10, east of No. 3 shaft, is about 2½ ft. wide. The vein in the 10, west of No. 3 shaft, is not quite cut through, the part seen being about 1 ft. wide. The vein in the 23, west of No. 5 shaft, is mixed with slates for about 2 ft. wide. The vein in the rise in the back of the 40, east of No. 5 shaft, is 2½ to 3 ft. wide. The stopes throughout the mine are looking well, the average size of the ore-bearing part of the vein being from 4 ft. to 4½ ft. wide. Other parts of the mine are without material change. At St. Francis Mine the vein in the 30, south from shaft, is about 2 ft. wide, composed of quartz, spots of ore, and copper greens, looking very promising. The vein in the rise in the back of this adit level, is producing some good stones of ore. The Capelton Smelting Works are running well.

—Jan. 25: Hertford Mine: The vein in the No. 1 shaft, sinking under the 40, has been from 3 ft. to 4 ft. wide. The vein in the 35, west of No. 1 shaft, has been about 3 ft. wide; there is a little slate mixed with this ore part of the vein. The vein in the 10, east of No. 3 shaft, is about 2½ ft. to 3 ft. wide. The vein in the 10, west of No. 3 shaft, is about 1 ft. wide. In cutting through the vein in the 10, east of No. 3 shaft, we find it to be from 4 ft. to 5 ft. wide, of ore; and at this part of the mine is new ground, we think highly of its prospects, immediate and future. The vein in the 23, west of No. 5 shaft, is about 1 ft. wide, mixed with slates. The vein in the rise in the back of No. 5 shaft, has been about 3 ft. wide, of ore of about 6 per cent. wet assay. The vein in the rise in the back of the 50, east of No. 5 shaft, is about 2 ft. wide. The vein in the 5, east of No. 5 shaft, is chiefly slates, with ore mixed through them. The vein in the 70, east of No. 5 shaft, is improving, there being a leader of about 1 ft. wide with ore. The Capelton Smelting Works are running well, and turning out fair quantities of regulus.

COLORADO UNITED.—Mr. Macrae, Jan. 20: The 13th level is still being driven, and at present is looking well. It carries a 4-in. streak of good first-class mineral. The stopes are also looking well. No. 1 stope is carrying a fine rich mineral, and although it only carries an average of from 3 to 4 in. of quality of the mineral is preferable to a wide streak of low grade ore. No. 2 stope is looking as well as it ever has. This stope carries a good 6 in. average of mineral, which gives some first-class ore, and some good second-class ore. No. 3 stope is looking about the same as last reported. The average of the stope is from 4 to 5 in., but the ore is rather inferior to that in the two former stopes. The mine is looking very well throughout. We have had some little difficulty with the engine lately. The balance-wheel cracked across the hub, which we

attained our taking it down and sending it to Georgetown to be mended. On the night of the 18th, the pump to the boilers burst, owing to the extreme cold, the thermometer registering in the morning 34° below zero (Fahr.). We have, however, remedied all this, but it has nevertheless thrown back the hoisting. Last night the water in the Union tunnel overflowed and flooded the track for the cure, which has, therefore, prevented the tramming to-day, as the water froze hard to the rails. We shall, however, commence tramming this afternoon, as we have placed the ice from the track. The following men are at present engaged in the Tarrill Mine: Geo. Williams and Co., four men, back of 4th level east; J. Pross and Co., four men, back of 5th level west, and back of 11th level east; J. Garland (Jewell and Co.), two men, back of 9th level west; Newbill and Co., four men, back of 11th level west; Squires and Wedge, three men, back of 11th level east; T. Carkeek, two men, back of 11th level east; Payne and Co., two men, back of 10th level west. Notwithstanding the deficiency in the hoisting machinery we have managed to send away a good average of mineral as follows:—Monday, Jan. 15, 52 sacks of second-class cobbed ore, 4975 lbs.; Wednesday, Jan. 17, 130 sacks of second-class cobbed ore, 12,820 lbs.; Friday, Jan. 19, 63 sacks of second-class cobbed ore, 6605 lbs.; total, 255 sacks = 12 tons 200 lbs. Monday, Jan. 15, 15 sacks of second-class, 1340 lbs.; total, 265 sacks, weighing 12 tons 150 lbs.—Lessee's ore: T. Carkeek, three sacks of first-class ore, and 45 sacks of second-class ore; total, 48 sacks.

CORPORATION OF SOUTH AUSTRALIA COPPER.—Capt. Bryant, Dec. 23: Blinman: In Massey's shaft the shaftmen are making excellent progress in sinking; the ground is more compact, therefore blasting can be more successfully accomplished; the character of the ground is much the same as last week. In the 80 ft. level south the lode is 2½ tons of 20 per cent. sulphur. In the 60 ft. level carried—say 4 ft. wide. The lode, in stopping to form the pillars, is level north, and 4 tons of 21 per cent. sulphur ore per cubic ft. Occasional stones of sulphurets, intermixed with black ore, in this stop, as well as in the level south, are met with. The work being carried on in this level is yielding and opening out good payable work. In the 50 ft. level south the tributaries in pitch in back of this level are making good wages.—Surface: The walls of winding-engine house are nearly completed. Outside loading for cage and loading for cylinder-bed have not yet been commenced. The carpenters have prepared the timber for the poppet-heads. We are getting on as fast with this as the limited supply of surface hands will permit. The machinery is in good working order. Owing to excessive evaporation, water used by masons, and consumed by engines, our dressing during the week has been limited to two days. Estimated quantity of ore obtained, 8 tons of 21 per cent.—Mount Rose Mine: Capt. Tregoweth reports, Dec. 16: I have sent away 3 trams to-day with 10 tons of best ore-roughs, the same as the samples of roughs sent down last. I shall send away four trams more next Tuesday. I also send to-day with the other ore—16 bags (1 ton) of stones or lumps of solid black and grey ore, as hauled up yesterday—at 11 ft. will give you a better idea of the richness of the mine than when it is broken down small. I have no change of importance to report since my last; all the features of the mine are good and healthy. Capt. Tregoweth, Dec. 22, reports: The shaftmen are engaged in stopping away the ore part of the ground at the bottom and opening out for the two bottom ends. No 3 pore have hoisted to the shaft from No 2 winze, and are now engaged in stopping the back of the level driven, which is turning out at present 2 tons of 40 per cent. ore per fathom. Nos. 2 and 5 pore are also working in payable ground at the back of 13 ft. level. I expect to load up four more bullock teams with ore for Leight's Creek siding to-morrow.

—Telegram from Adelaide Feb. 5: Large quantity of water in Blinman Mine. Digging daily. Output 80 tons monthly of 23 per cent. Struck very rich ore in the 31 ft. level. Output 80 tons monthly of 23 per cent. ore per fathom; production will amount to about 45 tons of 40 per cent. during December.

DEVALA MOYAR GOLD.—Manager, Jan. 14: We have just got 20 heads fairly running. It will be some time yet before I can give you the exact returns from this mill, as I shall not be able to treat the pyrites until the furnace is completed. I am using every ounce of the quartz crushed and payable, as I need not tell you that with a reef 90 ft. wide one portion of it is sure to be barren. The mill is beginning to clear away quartz with which we were blocked quickly, and enabling us to start a lot of coolies breaking out quartz. I told the captain this morning to put on 100.

PORTUNA.—Jan. 31: Canada Inco Mine: The lode in the 70, driving west of San Pedro's shaft, is regular, but has declined in value in the past few days to ½ ton per fathom. The 80, driving in the same direction, is going through broken and sterile ground. The lode in the 90, driving also to the west of San Pedro's shaft, is large, and contains good spots of ore, but not sufficient to value. In the 120, driving east of O'Shea's engine-shaft, the lode has been heard by strong cross joints, and the ground is hard. The lode in the 100, driving east of Louwer's shaft, is again showing signs of improvement, and produces good lumps of ore worth ½ ton per fathom. In Elvira's winze, sinking below the 80, very good ground has been laid open during the past fortnight, valued at 1½ ton per fathom.—Los Salidos Mine: In the 175, driving west of Taylor's engine-shaft, the lode continues poor, and the ground hard for driving. The lode in the 175, driving east of Taylor's engine-shaft, looks well, and produces fine stones of ore, worth ½ ton per fathom, but it is rather irregular. The 145, driving in the same direction, is laying open a great length of rich stopping ground, valued at 3 tons per fathom. The lode in the 130, driving to the east of Taylor's engine-shaft, has fallen off in value during the past few days to 1½ tons per fathom, caused by cross clay joints. In the 120, driving east of San Pablo's shaft, the lode continues compact, regular, and well defined, and the ground favourable, producing 1 ton of ore per fathom. In Alameda's winze, sinking below the 160, the lode continues to yield 1 ton per fathom, but the ground has become wet and troublesome.—San Antonio Mine: The lode in the 55, driving west of Henty's engine-shaft, is 2 ft. wide, containing spar and spots of lead ore, but not sufficient to value. In the 45, driving in the same direction, there is a large lode containing barytes and lead ore, which is a very promising appearance, producing 1 ton of lead ore per fathom. Henty's engine-shaft, sinking below the 55, is going down rapidly in a strong lode of barytes, and lead ore worth 2 tons per fathom.—San Francisco Mine: In the 40, driving east of San Francisco shaft, the lode is regular and strong, composed of spar and strings of lead ore, valued at ½ ton per fathom. The lode in the 40, driving west of San Francisco shaft, shows strong and compact, but contains little lead at present.

HEWLETT.—Manager, Jan. 22: Drift No. 14, north from the main incline, has been run 30 ft. the lode is 12 in. wide, assaying 15 ozs. silver and 30 per cent. lead. Cross-cut No. 1 has been driven 8 ft. in poor ground; I think, however, we shall find there is ore below the drift. Drift No. 15, north from cross-cut No. 1, has been driven 15 ft.; the lode is 4 ft. thick, assaying about 12 ozs. silver and 40 per cent. lead. No. 14, off No. 1 cross-cut, has been run 20 ft., and holed through to the stoppe off No. 2 cross-cut. The breast of this stoppe shows from 3 to 5 ft. of ore; it is, however, low grade. The Lent drift has been run 20 ft.; the lode in this is small. East drift, in old workings, has been driven 18 ft.; lode about 1 ft. wide. West drift, old workings, has been run 20 ft. in 1 ft. wide; the lode from this part of the mine runs about 14 ozs. silver and 20 per cent. lead; the main incline has not been advanced during the week, on account of the heavy inflow of water. We are now preparing a station for the pump in the side of the incline and shall commence driving ahead again. No 3 shaft has been sunk 10 ft. without striking the vein. I account for this by the fact that the lode on the present breast of the main incline has made a sudden dip downwards. The ground in the bottom of the shaft is getting softer and we may be in ore any day. **ISABELLE GOLD AND SILVER.**—Manager, Jan. 15: So far as I can make out, the shaft is now within 12 ft. of the old bottom, but it is impossible to say exactly, as the old shaft is all caved in and filled with slum and broken timber. Probing with a bar, however, I can get no further down than 12 ft. If this is all the depth, we should be at bottom by next report, and in a rich body of ore. Our line shaft has got a little out of truth, and caused several stoppages, breaking the bolts where it connects with the engine-shaft, and I may have to stop for 24 hours (if they again break) to line up and repair. With this single exception, everything about the mill works to a charm. In the east drift on the tunnel level, stones of ore are making their appearance in the face. The water pumped from the shaft can be utilised, as suggested by Admiral Selwyn, for concentrating the ore in the west drift; but before concentration with the Frue concentrators it must be pulverised. The additional chimney referred to by the Admiral was rendered necessary by the additional number of flues in the furnaces, the one chimney (though a large one) being insufficient to carry away so much sulphurous smoke. We have now a splendid shaft. With regard to the remark about heating the furnaces, unless new brickwork in furnaces is heated slowly they will sweat and crack.—Foreman's Report: The shaft is down 214 ft. for the week. East drift is 22 ft. in timbered, 1 ft. 10 in. for the week. There are eight men now in the stoppes taking out ore.

ROBINSON AND DONALDSON CONSOLIDATED.—A. Rickard, Jan. 13: The cross-cut in the No. 1 level is 12 ft., and steady progress is being made. The cross-cut in the No. 2 level is 10½ ft.; a vein 1½ in. wide in the foot has been cut, indicating the existence of a lode in that direction. The No. 3 rise is up 6 ft., yielding 2½ tons of smelting ore per fathom; lode well defined. The No. 2 winze is down 13½ ft., yielding 2½ tons of ore per fathom; lode opening out in bottom. The cross-cut in the No. 4 level is in porphyry. The No. 1 cross-cut of the 100 ft. level is 22 ft. in, and the vein has been cut. The No. 2 cross-cut of the 100 ft. level is 9½ ft. and further explorations are being made at this point. The 200 ft. level is in 8½ ft., yielding 2 tons of ore per fathom; lode 1½ ft. wide, carrying arsenical pyrites. The No. 2 stoppes are yielding 2½ tons of ore per fathom; the lode maintains its strength and value. Stoppes are now being started in the No. 3 level. The enlarging and re-timbering of the Champion engine-shaft has now been completed to a depth of 280 ft. The timbering of the 200 level west has now been completed, and the stoppes are yielding 4 tons of ore per fathom; smelting ore continues to increase. The 200 level east is in 55 ft.; lode carries 10 in. of mill ore. The telephone adit has been driven a total distance of 170 ft., and work has now been suspended in it pending completion of tramway.

LINARES.—Jan. 31: Pozo Ancho Mine: In the 115, driving east of Warner's engine-shaft, the lode is sufficiently large, but does not contain ore of any value. The 130, driving in the same direction, has declined in value during the past week. The lode in the 130, driving to the west of Warner's engine-shaft, contains spots of ore, but not of any value. The 115, also driving to the west of Warner's engine-shaft, although not so productive as it was, is still opening up profitable ground worth 1 ton per fathom. The lode in the 135, driving west of Peill's engine-shaft, has changed unfavourably in the past few days, its present value being 1 ton per fathom. In the 135, driving east of Peill's engine-shaft, the lode is small and unproductive. The lode in the 120, driving in the same direction, has declined in value to 1 ton per fathom during the past fortnight. The 105, driving east of San Francisco's shaft is less productive than it was. No. 247 winze, sinking below the 100, will be holed to the 115 very shortly. The lode in the 54½ winze sinking below the 75, is of great width, with ore throughout it, valued at 1 ton per fathom. No. 249 winze sinking below the 115, is going down in a powerful and productive lode, worth 2 tons per fathom. The usual quantity of mineral was delivered into the stores during the past month, and the stoppes are yielding moderately well at present. The various works at surface are kept on very steadily, and the machinery is in good condition. We estimate the output for Feb. at 250 tons.—Quinteros Mine: In the 115, driving west of Taylor's engine-shaft, this new level will be driven from the shaft far enough west to place, when a cross-cut will be put out south towards the lode. The lode in the 100, driving east of Taylor's engine-shaft, is large, with occasional good stones of ore. In the 80, driving in the same direction, the lode is strong and promising, with good stones of ore, valued at ½ ton per fathom. The lode in the 45, driving east of Judd's shaft, is small and regular; a good place, of paying ground was opened up in the past month, worth 1 ton per fathom. Taylor's engine-shaft, sinking below the 100, has reached the required depth for the 115, and the men are put to drive west. The lode in Orta's winze, sinking below the 32, continues very regular, producing 1 ton of ore per fathom. Dona's winze, sinking below the 30, is a new winze, situated east of Taylor's shaft, and over the 100, being

worth ¾ ton per fathom. We estimate the raisings for Feb. at 100 tons.—Majada Honda Mine: The lode in the 70, driving east of San Francisco's shaft, is very regular and moderately productive, yielding 1 ton per fathom. In the 70 (No. 3 lode), driving in the same direction, the lode has a promising appearance, having improved in value to ¾ ton per fathom. The works are going on very regularly, and the pumping and principal hauling engines in fine condition the stoppes yielded a moderate quantity of ore in the past month, and are turning out fairly well at present.

NERBUDA COAL AND IRON.—Manager, Jan. 12: In handing you my monthly progress report for the month of December, 1882, I will make no remarks, merely giving details of the work done, as I shall be sending my yearly report as soon as possible, which will contain summary of progress, and all matters I may have to lay before you.—Output: The total output for the month of December amounts to 1379 tons 14 cwt. 3 qrs. 7 lbs., of which 1323 tons 13 cwt. 3 qrs. 7 lbs. were sales, and 256 tons 4 cwt. were used for colliery consumption. This output is a good increase on the previous month, there having been a better attendance of men, field work being over for the present. I have heard nothing further from the Great Indian Railway Company relative to the running of daily trains, but I think we are gradually increasing our workmen residing on the place, and I am building native huts to induce men to settle down. The output for this month is the largest we have had this year.—No. 2 Shaft—Charguam District, No. 2 Seam: No coal has come out of this district during the month, but I am glad to say that just at the close the water was all got down, leaving 20 places dry ready to commence the new year with—that is to say, room for 80 men in the 24 hours, and the number of available places will increase, as all fresh places in this district are looking well.—South Level District, No. 2 Seam: The places in this district have gone very well during the month, but I am sorry to say that the mining of places are decreasing as the south headways are being cut off by the dyke or nip out. The plan as usual will run out against the basin, but from observation I am inclined to think this fault will not be over-run into one I hope to put through and find coal continuing to south. No. 1 headways, which is skirting the west fall, has gone 25 yards during the month. No. 2, 15 yards, and has got the fault. No. 3, 22 yards, and has also got the fault. No. 4, 27 yards, and is nearing the fault. No. 5, which is the next headway to the Charguam district, has gone 32 yards during the month. All these headways are going south. There have also been five wide bords going during the month, and the are still places in this district for 17 hewers a shift, or 51 men in the 24 hours.

Nos. 3 and 4 Seams: The places in this district have gone better this month; but the contractor does not get the places regularly filled as he should do. No. 1 headway, going south, has been driven 15 yards during the month, and No. 2, going north, 22 yards. There are eight wide bords going east, besides five walls or intermediate headways turned out of the bords, which have been driven during the month. There are places in the 3 and 4 seams at the end of the month for 30 hewers a shift, or 90 men in the 24 hours. The face of these workings are looking well.—Hole Pit: This pit reached a total depth of Dec. 31 of 225 ft., having been sunk during the month 19 ft. The strata is red and purple clay with conglomerate beds; at about this depth I expected the stone heap in accordance with the apparent lie of the strata in the pit; but the lie of the alluvial deposit is not quite so distinctly defined as in stratified rock, but a few days more must give the stoneheap or solid strata. Of course, as well as sinking the usual amount of timber and cribbing has had to be put in as we get down, as the sides will not stand safely for 6 ft. without being timbered.—No. 2 Boring: This boring reached a depth of 424 ft. 11 in. up to Dec. 31, having been bored 42 ft. 3 in. during the month. There has been a good deal of trouble and stoppage at this hole during the month, owing to the sides of the hole below the piping giving and filling the hole, and occasionally causing the rods to stick.—No. 5 Boring: This boring reached a depth on Dec. 31 of 307 ft. 5 in., and the amount sunk during the month amounts to 65 ft. 7 in.

NEW EMMA SILVER.—G. Cullen, Jan. 15: Since my letter to you, dated 8th inst., shaft has been sunk 8 ft., making the total depth at present 104 ft. Rock continues about the same. Machinery working nicely.

PESTARENA UNITED.—S. Gifford, Feb. 2: Exploratory Work: The 80 end and No. 1 lode continues in sterile schist, with occasional patches of quartz. The 120 north is in dry schistose rock, with a small branch of ore too poor for stopping; yielding 2 tons per fm. at 8 dwts. The end south shows a small vein of ore dipping fairly east, and yielding a little milling stone. In the 130 end north the lode remains large and regular, composed of dry schist and patches of calc spar. The end south is still in the country rock, but is being turned to reach the lode. On No. 5 lode the 33 north has an oblique vein coming in from the west, which appears to be the canter seen in the lower levels, and there are good promises of improvement. In the 65 south the ore is lying out in stiff schist, with dark granitoidal rock on footwall. The 80 north is yielding 8 tons per fathom, 16 ozs. silver, and the counter has come in making a good width of ore, with a marked improved appearance. The 80 south has a fair width of irregular quartz, but its grade is low, and the ground is very hard; the present yield is 3 tons at 7 dwts. The lode in the 90 north is producing 3 tons per fm. at 11 dwts.; it is a large lode of friable quartz, which promises to give a good quantity of better grade ore. The 90 south does not realise the promises lately given, the ground having again become disorganised, with little or no appearance of lode. At Pozzono the winze sinking under the adit shows a small string of sterile quartz, with very hard schist in bottom, and as sinking cannot be carried further without going to more expense, the place warrants at present, driving the adit end is resumed in preference. In January 517 metric tons of ore were treated, and 347 ozs. 17 dwts. 14 grs. of bar gold produced, showing an average yield of 13 dwts. 11 grs. per ton. The weather has been favourable for late transport, and this work has made good progress.

Val Toppe: The No. 1 end south on new lode appears to be reaching the slide, with a little ore making in patches of quartz, and strings of pyrites for the height of the level only; yielding 3 tons per fathom at 8 dwts. In the south end a quartz mass is yielding 12 tons per fathom at 5 dwts.; it continues wholly in low grade quartz against a good wall east, which is a welcome accompaniment with the ore of good pyrites. The No. 2 south end on the new lode still carries a small vein of quartz, but too poor for milling. The rise in the back has reached the slide, and now goes up on it with a large thickness of low grade quartz lying directly under the footwall. The ore treated last month was 274 tons, including 78 tons from stock at the establishment, and the bar gold produced was 105 ozs. 10 dwts. 18 grs., showing an average yield of 8 dwts. nearly.

PIERREFITTE.—Manager, Feb. 5: The lode throughout the mine fully maintains its value. I am pleased to tell you the lode in the end going south-east is becoming rich again. For some time past we have been driving through some poor stuff. Snow and wind have again interfered with the working of the cable this week; quite two days have been lost in consequence. Still, the ore returns are good; 45 tons of splendid silver-lead, besides many tons of blende. We have begun making the tramroad from the new adit level to the station of the wire rope, and should we not be prevented from working by bad weather, I expect to have it completed in six weeks. We have also commenced the shifting of the little wire rope-way, one section of which is already in place.

PONTGIBAUD.—W. H. Rickard, Feb. 1: Bourne Mine: The 225 metre level, south from Taylor's shaft, continues to show a regular, but unproductive lode. The 200 metre level, in the same direction, presents a more regular appearance, and, yielding a little ore stuff of average quality. The winze below this level and the rise underneath yields low quality ore stuff.—Virginia's Lode: The rise in the back of the 100 metre level is unproductive. The intermediate lode on the eastern part of the lode yields ¼ ton of ore per current metre. The 60 metre level north, on the northernmost split of the lode, yields ¼ ton of ore per current metre. The same level on southern part is unproductive. The 20 metre level north yields a little good quality ore stuff. The same level south is unproductive ore stuff, but the tribute pitches are a little diminished in value. At Seybouse the winze below the adit being unproductive we set a cross-cut to the east to prove a vein in that direction, but with no good result, consequently it is suspended.—St. Denis: The sinking of the shaft has gone on well; we hope to attain the necessary depth for the establishment of a 50 metre level this month; the part of the lode visible in the shaft is unproductive. The lode in the 37 metre level north is small, being 15 centimetres wide, composed of quartz, spotted with ore. The lode in the south end is large and regular, producing pyrites, but low grade; the level is being rapidly pushed on, owing to the lode lying before it.—La Brousse: The cutting of the 200 metre lower part at Alice's shaft has been finished, and the upper one commenced; in the north end of the former a vein was intersected, letting out much water, which for a time drowned the lower lift of pumps, the ground having drained we were enabled again soon to resume working; we hope in the current month to see something of the lode at this level. The 160 metre level north presents a kindly appearance, and yields ¼ ton of ore per current metre; the same level south yields stones of ore stuff irregularly. The lode in the 140 metre level south has produced ore stuff during the past month, but is now unproductive. The lode in the 120 metre level, north of Basard's shaft, has much improved in appearance, and produces some pretty good ore stuff. The 80 metre level south is unproductive. The stoppes throughout this mine have maintained their yield; the tribute pitches have not increased in value since last month.—Pranal: The 110 metre level, north of St. George's shaft, yields ¼ ton of ore per current metre; the same level south has yielded ½ ton of ore per current metre. The 90 metre level south yields a little low quality ore stuff; the same level on the eastern part of the lode yields ½ ton of ore per current metre. The two winzes below the 90 yield ½ ton of ore per current metre each. In the 70 metre level north both branches of the lode are unproductive. The rise in the 70 south is poor. Our stoppes and tribute pitches about maintain their usual yield. The trial level south of cross-cut at Lacombe produces barytes and spots of blende.—Surface: The weather has continued favourable during the month to our transport and dressing operations, and our samplings have amounted to 205 tons.

RHODES REEF GOLD.—Manager, Jan. 14: We are now crushing from the south end of the claim, and from the gold to be seen, and the large amount of pyrites, the quartz should give us good returns. We are pushing on the opening of this end of the reef as fast as possible. No. 2 driven south on the lode in middle reef, in No. 2 tunnel, 17 ft. during the week; the lode is 4 ft. wide, and contains a large percentage of sulphides; in fact, the further south we drive on the different lodes the better the reefs look. The drive south in No. 3 level has been pushed 15 ft. along the course of the reef, where it is 3 ft. thick, and contains a large percentage of pyrites, and I can always find free gold when I look for it. The quartz going south looks far better than any we have had at Rhodes Reef before. We are putting in two tunnels further south to strike the lode. No. 3 tunnel has been driven 11 ft. during the week, and No. 4 tunnel 31 ft.

RICHMOND CONSOLIDATED.—Telegram, Feb. 6: Week's run (one furnace), \$12,000, from 304 tons of ore; refinery \$10,000.

—Samuel Longley, Jan. 15: The 105 south drift from station has been run 20 ft. Total 46 ft. In shale. The 300 south-west drift from station has been run 15 ft. Total 252 ft. In hard favourable limestone. The 300 south-east drift from south-west drift has been extended 6 ft. Total 195 ft. In hard favourable limestone. The 300 east drift from south-east drift has been run 8 ft. In very hard favourable limestone. Commenced at a point 176 ft. in from south-west drift. The 200 south-east drift from chute under No. 18 chamber has been run 25 ft. Total 35 ft. Following fissure in favourable limestone. The 700 north-east drift from main west drift has been run 4 ft. Total 212 ft. In very favourable limestone. Exploration of this section completed. The 700 south-west drift from main west drift has been run 9 ft. Total 180 ft. In favourable limestone. The 700 north drift (near station) from east drift has been run 8 ft. Total 44 ft. In favourable limestone. The 700 north-west from above has been run 4 ft. Total 15 ft. In favourable limestone. The 700 north drift from south-west drift has been run 8 ft. In hard favourable limestone, commencing at a point 141 ft. in from west

drift. The 900 north-west drift from north-east drift from east drift from station has been run 21 ft. Total 203 ft. In favourable broken limestone. The 900 north drift from north-west drift from north-east drift from east drift from station has been run 24 ft. Total 60 ft. In favourable broken limestone. The 900 south-east drift (under chute) has been extended 20 ft. Total 58 ft. In limestone, and ledge matter. The 1050 north-west drift from station has been extended 25 ft. Total 385 ft. In crushed limestone. The 1050 north-east drift from north-west drift has been run 26 ft. Total 115 ft. In crushed limestone.

RUBY AND DUNDERBERG CONSOLIDATED.—Jan. 14: Dunderberg: The upraise above the 300 ft. level has not been advanced any during the week, the men being engaged in making a chute and ladders. There is no change in any of the stoppes now being worked on tribute. There are two men, four contractors, and 12 tributaries at work.—Home Ticket: The stoppe at the end of the bottom drift from the perpendicular shaft is looking well; the ore body is 30 ft. in length, and from 6 to 8 ft. in width. There is quite an improvement in the stoppe above the 40 ft. west drift; the ore at present is about 4 ft. wide. Have shipped 47 tons ore this week, and have about 45 tons at the mine ready for shipment; 12 men at work.—N.B. The following telegram has been received from Eureka, dated Feb. 6:—Home Ticket: The ore body is widening.

SCHWAB'S GULLY DIAMOND.—(De Beer's Mine, Kimberley).—Dec. 23: The quantity of blue ground hauled during the month was 1551 loads; washed 1594½ carats were found, and 1753¼ carats sold realising 1812. 13s. 6d. The total working expenses were 592. 3s. 4d.

SOUTH EAST WYNAAD ESTATES AND GOLD.—J. J. Cooper, Jan. 15: In respect to the monthly clean up to Jan. 8—170 tons crushed; free gold, 380 dwts.; 37 tons pyrites, assay value 3 ozs. 5 dwts. 7 grs. per ton = 2415 dwts. 19 grs.; 4 tons blanketing, assay value 1 oz. 15 dwts. 14 grs. per ton = 146 dwts. 8 grs.; Total crushed 2922 dwts. 3 grs. = 17 dwts. 4 grs. per ton. We have restarted crushing, having made the necessary repairs to the reservoir. At the same time we took the opportunity of overhauling the mill and engine, so that everything is in thorough working order again.—Gold: I am remitting three bars to you this week weighing 27½ ozs.; one from the pyrites.

BRITISH IRON TRADE ASSOCIATION.

Statistics of the production of pig-iron for the year ending Dec. 31, 1882:—

District.	PRODUCTION OF PIG-IRON.		
	Half-year ending June 30, 1882.	Half-year ending Dec. 31, 1882.	Total production for 1882.
Cleveland	1,332,543	1,356,107	2,688,650
Scotland	556,600*	669,400	1,226,000
West Cumberland	472,038	529,143	1,001,181
South Wales	476,536	406,769	883,305
North Wales	25,672	23,041	48,713
South Staffordshire	190,442	208,001	398,443
North Staffordshire	157,386	159,731	317,117
Lincolnshire	102,861	98,700	201,561
Lancashire	392,668	390,071	782,739
Northamptonshire	90,475	101,640	192,115
West and South Yorkshire	151,096	128,157	279,253
Derbyshire and Notts	228,653	217,082	445,735
Shropshire	39,275	41,200	80,475
Gloucestershire, Wiltshire, &c.	25,000	23,000	48,000
Totals	4,241,245	4,252,042	8,493,287

* Estimated.

Net increase on 1881, 117,922 tons.

Stocks of pig-iron held by makers and in warrant stores in the United Kingdom at Dec. 31, 1882, with increase or decrease as compared with Dec. 31, 1881:—

District.	Stocks at		
	Dec. 31, 1882.	Dec. 31, 1881.	Increase* or decrease†
Cleveland	266,179	378,170	111,991†
Scotland	836,000	940,000	104,000†
West Cumberland	101,356	68,051	33,305*
South Wales	78,519	53,238	25,281*
North Wales	3,740	10,740	7,000†
South Staffordshire	38,802	46,500	7,698†
North Staffordshire	47,523	28,707	18,816†
Lincolnshire	8,200	23,844	15,644†
Lancashire	60,218	57,836	2,382*
Northamptonshire	18,720	14,915	3,805*
West and South Yorkshire	54,180	49,070	5,110*
Derbyshire and Notts	37,757	26,686	11,071*
Shropshire	21,500	34,005	12,505†
Gloucestershire & Wiltshire ..	4,200	4,500	300†
Totals	1,576,894	1,736,262	159,368 tons.

The stocks of pig-iron on Dec. 31, 1881, amounted to ... 1,736,262

The production of pig-iron in 1882 was ... 8,493,287

Deduct stocks on Dec. 31, 1882 ... 10,229,549

Total consumption of pig-iron in 1882 ... 8,652,655

As against a consumption in 1881 of ... 8,182,513

Being an increase of ... 470,142

NOTE.—The stocks at Dec. 31, 1882, are equal to 18·2 per cent., or 9·4 weeks of the consumption of that year, as against 21 per cent., or 11 weeks of the consumption of 1881, represented by the stocks on Dec. 31 of that year.—London, Feb. 2. J. S. JEANS, Sec.

THE COAL TRADE.

Mr. J. R. Scott, the Registrar of the London Coal Market, has published the following statistics of imports and exports of coals into and from the port and district of London, by sea, railway, and canal, during January, 1883:—

IMPORTS DURING THE YEAR 1882.			
By Sea.	Ships.	Tons.	By Railway and Canal.
Newcastle	228	233,380	126,384 11
Sunderland	136	120,195	95,879 0
Seaham	19	12,855	78,798 11
Hartlepool	41	18,386	181,701 0
Middlesbrough	1	916	64,725 4
Scotch	6	2,784	5,780 5
Welsh	21	21,741	—
Yorkshire	14	4,572	—
Cumberland	—	—	—
Duff	—	—	—
Small Coal	5	5,880	—
Cinders	2	226	—
Colonial	8	1,397	—
Total	483	422,332	588,865 5
Imports—1882	478	385,752	Imports—1882

ROOT'S PATENT
TUBULOUS STEAM-BOILER
 SAFE
 ECONOMICAL
 EASY TRANSPORT IN MOUNTAINOUS COUNTRIES
KNAPS PATENT MECHANICAL
STOKERS
 APPLICABLE TO ALL KINDS OF BOILERS & FURNACES
ECONOMICAL AND SMOKE CONSUMING
THE PATENT STEAM BOILER CO.
 HENEAGE STREET
BIRMINGHAM

LONDON AGENT: MR. CONRAD KNAP, 11, QUEEN VICTORIA STREET, E.C.

EVERY DESCRIPTION

OF NEW AND SECONDHAND

ENGINES,

BOILERS,

PUMPS,

SHAFTING, PULLEYS, BELTING,

AND

MACHINERY GENERALLY.

Before Purchasing, send for

PHILLIPS' MACHINERY REGISTER,

Containing over 2000 entries of above

ADDRESS—

CHARLES D. PHILLIPS,

EMLYN WORKS, NEWPORT, MON.

ENGLISH INVESTMENTS

IN

AMERICAN MINES.

J. TROWBRIDGE BAILEY,

MINING ENGINEER AND EXPERT.

Member American Institute Mining Engineers.

Detailed and Accurate Reports furnished upon Gold, Silver, Copper, Coal, Properties, Mill Enterprises, &c., in Colorado, New Mexico, and the Central Mining Districts of the United States. Titles examined. Maps constructed, and Reliable Information of any nature concerning Mining Interests furnished promptly. A List of English and American References of high character can be obtained from Messrs. MARCUS WARD & Co., No. 63, Chandos-street, London; or MINING JOURNAL Office.

All communications for Mr. BAILEY should be mailed to—
IDAHO SPRINGS, COLORADO, U.S.

J. A. JONES,

MINING ENGINEER,

GIJON (ASTURIAS), SPAIN.

Mines inspected and reported on. Assays and valuations effected. Has on hand offers of Mines of Copper, Calamine, Blende, Phosphate of Lime, Tin, Lead, Iron, Manganese, and Manganiferous Iron Ores.

MINING ENGINEER.

ALEX. DEL MAR.

Mining Engineer, late Director of the United States Bureau of Statistics, Mining Commissioner for the United States Monetary Commission &c., 216, SANSOME STREET, SAN FRANCISCO.

Cable Address: "Delmar, San Francisco."—Branch Offices: 61, Broadway, New York, and 77, Cornhill, London, E.C.
 Particular attention paid to Hydraulic Mines and Mining Machinery.

LIEBIG'S EXTRACT OF MEAT AND MALT WINE
 (COLEMAN'S).
A DELICIOUS BEVERAGE AND TONIC

IMPORTANT TESTIMONIAL.

Queen's Crescent, Haverstock Hill, London, March 5th, 1881.

DEAR SIR,—Some time since, being greatly fatigued with overwork and long hours at business, my health (being naturally delicate) became very indifferent. I lost all energy, strength, and appetite, and was so weak as to be scarcely able to walk.

As you are aware, I sent for a dozen of your Extract of Meat and Malt Wine, which, in a few days, pulled me up marvellously. Three or four glasses of it daily have quite altered and restored me to better health than ever, "without the assistance of a doctor."

I am now giving it to my son, twelve years of age, whom we have always thought consumptive, and from a puny ailing boy he seems to be fast growing into a strong healthy lad.

Enclosed you have cheque. Please send me two dozen of the "Extract." With

Yours for your prompt attention to my last

I am Sir, yours truly,

GEORGE A. TYLER.

Pints, 30s.; Quarts, 50s. per dozen. Carriage Paid to any Railway Station.

Sample Bottle sent free for 33 stamps.

Post-Office Orders and Cheques payable to—

COLEMAN AND CO.,

MUSPOLE STREET, NORWICH.

MAPS OF THE MINES, AND OF UTAH TERRITORY.

FROISETH'S NEW AND REVISED MAP FOR 1875.—Size 40 by 56 inches, scale 8 miles to the inch. Handsomely engraved, coloured in counties, showing the Towns, Settlements, Rivers, Lakes, Railroads, Mining Districts, &c., throughout the Territory, and all the Government Surveys to date. Mounted on cloth, £2; half-mounted, £1 12s.; pocket form, £1.

Also, GENERAL MINING MAP OF UTAH, showing twenty-eight of the principal Mining Districts adjacent to Salt Lake City, and location of the most prominent mines. Price, pocket form, 6s.

Also, NEW MAP OF LITTLE AND BIG COTTONWOOD MINING DISTRICTS showing the location of over Four Hundred Mines and Tunnel Sites, together with the Mines Surveyed for United States Patent. Price, sheets, 6s.; pocket form, 8s.

For sale, and supplied by—

TURNER and Co., 57 and 59 Ludgate Hill, London.

B. A. M. FROISETH, Salt Lake City, Utah, U.S.

VALUABLE MINING PROPERTY AND PLANT,

STANHOPE, DURHAM.

BY ORDER OF THE LIQUIDATOR.

NORTHERN LEAD MINING COMPANY (LIMITED).

VALUABLE PLANT AND MINING PROPERTY, comprising LEASES OF THREE DISTINCT AND IMPORTANT MINES, situated in the immediate neighbourhood of Mr. Beaumont's celebrated mines, and comprising ENGINES, WATER-WHEELS, CRUSHER, PUMPING, and WINDING-GEAR, TRAMWAYS, WAGON, and a large quantity of MINING IMPLEMENTS.

MR. HERBERT H. FULLER is instructed to SELL the ABOVE VALUABLE PROPERTIES BY AUCTION at The Mart, Tokenhouse-yard, Lothbury, London, E.C., on Thursday, February 15th, at One o'clock precisely.

The leases, plant, &c., will first be offered in one lot, and in the event of their not being sold the plant and machinery will be offered alone. Copies of inventory with full particulars and conditions of sale may be obtained from the liquidator, WILLIAM EDWARDS, Esq., of Waterdale, Wolverhampton; or from the Auctioneer, 1, Queen Victoria-street, London, E.C.

BY ORDER OF THE MORTGAGEES.

PANDORA LEAD MINING COMPANY (LIMITED).

VALUABLE LEASES, BUILDINGS, and PLANT of the PANDORA LEAD MINES, near Llanrwst, Carnarvon, comprising ENGINES, WATER WHEELS, CRUSHERS, PUMPING and WINDING GEAR, TRAMWAY, WAGONS, and all necessary MINING IMPLEMENTS.

MR. HERBERT H. FULLER is instructed to SELL THIS PROPERTY, BY AUCTION, in One Lot, at The Mart, Tokenhouse-yard, on Thursday, February 15th, at One o'clock precisely.

Particulars and conditions of sale may be obtained from FREDERICK FOSS, Esq., Solicitor, 3, Abchurch-lane, City; and from the Auctioneer, 1, Queen Victoria-street, City.

NORTH WALES.

SALE OF A GOOD STEAM AND HOUSE COAL COLLIERY.

MESSRS. CHURTON, ELPHICK, AND CO. WILL SELL, BY AUCTION, at the Queen Railway Hotel, Chester, on Wednesday, the 28th February, 1883, at Two for Three P.M. punctually, subject to conditions to be then produced, all that very VALUABLE COLLIERY, known as the **FLINT COLLIERY,**

About half-a-mile from the town of Flint, with branch railway and sidings to the main line of the Chester and Holyhead Railway, in full work, and raising from the Brasse, Thick coal, and 5 ft. seams, about 500 tons of good steam and house coals per week, which may be largely increased; in addition there is the Cannel seam partially worked, and the Lower Four Feet seam intact. The situation of the colliery is exceptionally favourable for disposal of its produce, it being the nearest colliery to the town of Flint, there is a good local sale; and, while it is in close proximity to several large manufacturing works, it is on equality with other North Wales collieries as regards rates to Birkenhead and other markets.

The coal mines under a surface area of about 520 acres are held under leases and lack-nots for terms having upwards of 18 years to run, at minimum rents, amounting together to £360 per annum, recoverable out of royalties; exemption from all claims for surface trespass on 3a. 3r. 2p., comprising the site of the colliery and branch railway has been purchased.

There are three shafts, all geared for winding, and fitted with three high-pressure winding engines, and one 100 horse-power pumping engine, with seven steam boilers.

The above engines, boilers, &c., and all the plant and machinery of the colliery, as a going concern, are included in the sale.

For further particulars, apply to Mr. J. E. EDWARDS, City Treasurer; the Auctioneers, or WALKER, SMITH, and WAT, Solicitors, all of Chester.

The leases and lack-nots may be inspected at the offices of the latter.

FOR SALE, OR HIRE, one of DUNHAM'S PROSPECTING STAMPER recently made for a Transvaal order. It is made of the best materials (principally steel and gun metal, and so constructed that it can be carried on mules' backs, no piece weighing over 1½ cwt. This is an excellent machine for opening up new mines, as the power required is very small and the output per day from 3 to 4 tons. A similar machine can be seen working in London.

Address, "C. S.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

BARROWS AND STEWART, ENGINEERS, BANBURY.

PORTABLE STEAM ENGINES, &c.

The following are high class, and TO BE SOLD very cheap for the quality:—30 H.P. double cylinder new PORTABLE ENGINE, with link-motion reversing gear.

25 H.P. ditto ditto ditto ditto

25 ditto ditto (without) ditto

18 ditto ditto (with or without) ditto

12 ditto ditto ditto ditto

10, 8, 7, and 5 H.P. single cylinder PORTABLE or SEMI-PORTABLE ENGINES.

8, 6, 4, and 3 ditto VERTICAL STEAM ENGINES.

A 6 H.P. combined ENGINE, BOILER, and 6 ft. pan Mortar Mill on wheels.

Also several excellent secondhand PORTABLE STEAM ENGINES.

12 H.P. double cylinder PORTABLE ENGINE, by Burrell and Son.

8 single cylinder ditto ditto Marshall and Son.

8 ditto ditto ditto Harrows and Stewart.

6 ditto ditto ditto Harrows and Stewart.

A Cornish BOILER, 8 ft. 10 long x 4 ft. 6 diameter.

A ditto 9 ft. 10 long x 3 ft. 2

A CIRCULAR SAW TABLE, 5 ft. x 2 ft. 6, with 30 in. saw.

A BAND SAW MACHINE, 30 in. pulleys.

To be seen at

BARROWS AND STEWART'S WORKS, BANBURY, OXON.

STEAM BOILERS FOR SALE, SECONDHAND, with and without Galloway Tubes, single and double rivetted, working pressure of 60 lbs., 65 lbs., 70 lbs., and 80 lbs. steam pressure. VERY CHEAP.

FIVE BOILERS, 30 feet by 7 feet 6 inches diameter, excellent order.

SIX BOILERS, 30 feet by 7 feet Galloway Tubes, "

FOUR BOILERS, 26 feet by 7 feet " "

THREE BOILERS, 24 ft. by 6 ft. 6 in. " "

FOUR BOILERS, 24 ft. by 6 ft. 6 in. " "

And other sizes in stock. " Equal to new.

WINDING ENGINES and COLLIERY PLANT of every description, second-hand, in stock. VERY CHEAP. Write to—

H. HELLWELL and CO., 4, NORTH CORRIDOR

ROYAL EXCHANGE, MANCHESTER.

BY PRIVATE CONTRACT.

FOR SALE, COUPLED HORIZONTAL ENGINES. Cylinders 24 in. diameter, 4 ft. stroke.

HORIZONTAL ENGINE, two cylinders, 16 in. diameter, 2 ft. 6 in. stroke.

COUPLED BLAST ENGINE, two cylinders, 14 in. diameter, 2 ft. 6 in. stroke.

Apply, THE BEDE METAL AND CHEMICAL COMPANY (Limited), St. Nicholas Chambers, Newcastle-on-Tyne.

FOR SALE, a 30 H.P. PORTABLE STEAM ENGINE has link-motion reversing gear, with winding and pumping gear complete. A 16 H.P. PORTABLE WINDING and PUMPING ENGINE: Also a 6 H.P. PORTABLE HOISTING ENGINE.

To be seen at—

BARROWS AND STEWART'S WORKS, BANBURY, OXON.

VALUABLE MINES FOR DISPOSAL.—E. V. J., Calle San Juan, 55, Madrid, can DISPOSE OF A MINING DISTRICT, producing 10 tons of lead and 20 kilograms of silver daily, besides OTHER MINES OF COPPER, LEAD, IRON, ANTIMONY, MANGANESE, and PHOSPHATE OF LIME.

A RICH AMERICAN SILVER MINE, well developed, FOR SALE, FOR VALUE OF ORE IN SIGHT.

Address, with references, A. R. CHISOLM, Editor Mining Record, New York.

THE SAFETY BLASTING POWDER COMPANY (LIMITED).

OFFICES: 11, QUEEN VICTORIA STREET, LONDON, E.C.

The valuable attributes claimed for this Powder are—

ABSENCE OF SMOKE.

ABSENCE OF FUMES.

ABSENCE OF FLAMES, and

IMMUNITY FROM DANGER BOTH IN STORAGE AND USE.

By exhaustive experiments, also, it has been proved better in every respect than either Dynamite or Blasting Powder, so that there is great advantage to the consumer in safety and relative cheapness.

Sample cases in either loose or cartridge form (1½ dia.), containing 100 lbs. (40s.), 50 lbs. (20s.), 25 lbs. (10s. 6d.), will be sent on application. A 100 lb. case free to any railway station in the United Kingdom.

Special quotations for quantities.

Remittances to be made payable to the Manufacturing Agents—

Messrs. FIGOU, WILKS, and LAURENCE (Limited), 11, Queen Victoria-street, London.

Descriptive Pamphlets gratis on application.

MONEY LENT, at EIGHT, NINE, and TEN PER CENT., on FIRST MORTGAGE OF FREEHOLDS for IMPROVEMENTS and STOCKING, said freeholds in the Province of MANITOBA.

Address, HERBERT C. JONES, Solicitor, 20 Masonic Hall, Toronto.

ARMY CONTRACTS.

COAL AND KINDLING WOOD.

TENDERS for the SUPPLY of COAL and KINDLING WOOD for MILITARY SERVICES, for Twelve Months, from the 1st April, 1883 will be received until Twelve o'clock noon, on TUESDAY, the 27th day of February, 1883, by the Commissariat Officers in charge of the undermentioned districts:—

NORTH BRITAIN DISTRICT..... Commissariat Office, 1, Castle Terrace, Edinburgh.
NORTHERN DISTRICT..... Commissariat Office, Fishergate, York.
WESTERN DISTRICT..... Commissariat Office, 38, George Street, Devonport.

SOUTHERN DISTRICT..... Commissariat Office, Colewort Barracks, Portsmouth.

SOUTH-EASTERN DISTRICT..... Commissariat Office, 10, Esplanade, Dover.

CHATHAM DISTRICT..... Commissariat Office, the Barracks, Chatham.

WOOLWICH DISTRICT..... Commissariat Office, Royal Artillery Barracks, Woolwich.

EASTERN DISTRICT..... Commissariat Office, Abbey Field, St. John's Green, Colchester.

HOME DISTRICT..... Commissariat Office, Horse Guards, Whitehall, London.

ALDERSHOT..... Commissariat Office, South Camp, Aldershot.

CHANNEL ISLANDS.

ALDERNEY..... Commissariat Office, Alderney.

GUERNSEY..... Commissariat Office, Guernsey.

JERSEY..... Commissariat Office, Jersey.

Forms of Tender and Conditions of Contract (showing approximate quantities) may be obtained on application at the above-named Commissariat Offices, by letter, addressed to the Senior Commissariat Officer, or in person, between the hours of Ten and Four o'clock, and no Tender will be entertained unless made upon the form so obtained.

The Tenders must be properly filled up, signed, and dated; and no Tenders will be noticed unless delivered in time at the above-named District Offices, under closed envelope, marked "Tender" on the outside.

EVAN COLVILLE NEPEAN,
 Director of Army Contracts.

Army Contract Department, War Office, Pall Mall, S.W.,
 5th February, 1883.

NOTICE TO COAL CONTRACTORS.

THE COMMISSIONERS OF IRISH LIGHTS hereby give notice that they are prepared to RECEIVE TENDERS for SUPPLYING COAL to the SEVERAL LIGHTHOUSES round the COAST OF IRELAND.

Tender Forms, setting forth the quantity required at each station, can be obtained on application to the undersigned at this office.

It is optional for contractors to tender for supplying the entire or part of the Coast; but offers for supplying the entire Coast will receive preference.

The Commissioners do not bind themselves to accept the lowest or any Tender. Tenders will be received at this office up to Four o'clock on Thursday, the 1st March next, and are to be sent through post, endorsed "Tender for Coal," and addressed to the Secretary.

By Order, OWEN ARMSTRONG, Secretary.
 Irish Lights Office, Dublin, 7th February, 1883.

BULTHY MINE LEAD AND BARYTES WORKS COMPANY (LIMITED).

Incorporated under Companies Acts, 1862 to 1880, whereby the Liability of the shareholder is strictly limited to the number of shares subscribed for.

CAPITAL £15,000, IN 15,000 SHARES OF £1 EACH.
 Payable 5s. on application, 5s. on allotment, and the balance by two instalments of 5s. each, at intervals of not less than one month.

All costs and charges incidental to registration will be paid by the vendors.

DEPOSITS RETURNED IN FULL SHOULD NO ALLOTMENT BE MADE.

DIRECTORS.

DUNCAN IRVINE, Esq., 5, Northumberland-street, Strand, W.C.

Colonel J. E. BEALES, Hanover Square Club, W.

DAVID ROWELL, Esq., 2, Post's Corner, Westminster, S.W.

EDGAR O. FERGUSON, Esq., C.E., 8, Westminster Chambers, S.W.

(With power to act as their number.)

BANKERS—LLOYD'S BANKING COMPANY (Limited), Welshpool.

AUDITOR—H. GRAY, Esq., Chartered Accountant, 36, Gresham House, Old Broad-street.

SECRETARY—J. LUND, Esq.,

REGISTERED OFFICES—6, WESTMINSTER CHAMBERS, LONDON, S.W.

ABBREGED PROSPECTUS.

This company is formed for acquiring and more extensively working the above property, which is situated one mile from the Middleton Station on the Shrewsbury and Welshpool Railway, in the celebrated Shropshire lead mining district. It lies six miles north of the celebrated Old Snailbeach Mine, from which enormous riches have been raised, and which is still working most profitably.

The unusual advantages offered to subscribers of this company are:—

1st.—The very moderate sum for which the property is purchased.

2nd.—The small amount of capital required to further prove and develop the mine.

3rd.—The established business in the barytes, the supply of which is practically inexhaustible.

4th.—The estimated 15 per cent. dividend on the entire capital from the sale of barytes alone.

5th.—The value of the property as a lead mine.

6th.—The close proximity of the mine to a railway commanding access to all the important markets.

7th.—The absence of pumping expenses, the mine being drained by the deep adit level.

Prospectuses and Forms of Application for Shares can be obtained from the Secretary of the company, or from the Bankers.

MINE GUAYANA, VENEZUELA.
COUPONS OF SHARES 322

Gold in bars produced in the month of December, 1882, and re-

mitted to Messrs. Baring Brothers and Co., London, 9430 77-100 ozs.

DIVIDEND distributed for each coupon, \$400.

(Signed) A. LICIONI, President.

(Signed) VICTOR T. GRILLET, Treasurer.

FREDERIC F. CHISOLM,

CONSULTING MINING ENGINEER & FINANCIAL AGENT,

P.O. Box 2238. DENVER, COLORADO.

A Specialty made of care of Mining Property for non-resident Owners, and the General Management of Property for Foreign Mining Companies.

REFERENCES FURNISHED IF DESIRED.

HERBERTON (WILD RIVER) TIN LODES, NORTH QUEENSLAND.</

NOBEL'S DYNAMITE



Manufactured and sold by
NOBEL'S EXPLOSIVES COMPANY, LIMITED
 (FORMERLY THE BRITISH DYNAMITE COMPANY LIMITED),
 Head Office: 149, West George Street, Glasgow.
 EXPORT AGENTS: JAMES THORNE AND CO., 85, GRACECHURCH STREET, LONDON, E.C.
 FACTORIES—ARDEER WORKS, STEVENSTON, Ayrshire.
 WESTQUARTER WORKS, POLMONT STATION, STIRLINGSHIRE.
 REDDING MOOR WORKS, POLMONT STATION, STIRLINGSHIRE.

THE COTTON POWDER COMPANY (LIMITED)

RECOMMEND TO CONTRACTORS, MINERS, PIT SINKERS, QUARRYMEN, AND OTHERS, THEIR

TONITE, OR COTTON POWDER,

AS BEING THE SAFEST, CHEAPEST, AND STRONGEST OF ALL EXPLOSIVES.

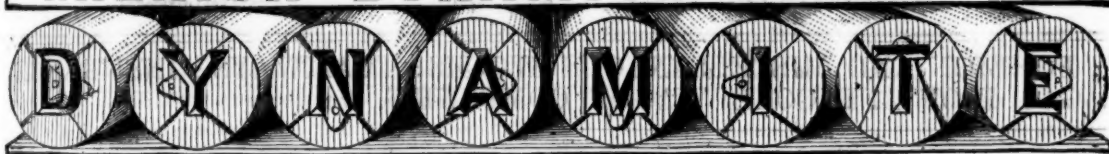
TONITE is the most efficient and economical blasting agent ever invented, and is largely in demand. It does not contain any Nitro-glycerine, and is, therefore, exempt from the dangers of exudation, or of freezing and its attendant process of thawing. The Company also manufacture PATENT DETONATORS of a quality much superior to the foreign article. The trade supplied on favourable terms.

23, QUEEN ANNE'S GATE, LONDON, S.W.

WORKS: FAVERSHAM, KENT.

Agents: DINEEN and Co., Leeds; DAVID BURNS, Halthwhistle; R. J. CUNNACK, Helston, Cornwall; J. and W. SMITH, Chapel-en-le-Frith; W. VEITCH, Jedburgh, N.B. W. HARRISON, Barrow-in-Furness; W. J. PARRY, Bangor; HUNTER and FOTHERINGHAM, Glasgow.

RHENISH DYNAMITE COMPANY.



OF THE GREATEST STRENGTH ALLOWED BY THE EXPLOSIVES ACT.

Head Office: JOHN DARLINGTON,
 2, Coleman Street Buildings, Moorgate Street, London, E.C.
 LONDON AGENT, —E. KRAFTMEIER & CO., 5, GREAT WINCHESTER STREET BUILDINGS, LONDON, E.C.

SAMUEL OSBORN AND CO.,

MANUFACTURERS OF TOUGHENED

CRUCIBLE STEEL CASTINGS

Of all descriptions of special strength and solidity.

ALSO, MANUFACTURERS OF

BEST CAST STEEL FOR ENGINEERS AND MINERS' PURPOSES; FILES; SAWS; HAMMERS; RAILWAY SPRINGS, &c.

STEEL SHEETS AND FORGINGS.

SOLE MAKERS OF

"R. Mushet's Special Steel," for Lathe and Planing Tools and Drills,
 THE STEEL WHICH REQUIRES NO HARDENING.

And R. Mushet's Celebrated Extra Best Welding Titanic Cast Steel
 for Borers.

ADDRESS:—

CLYDE STEEL AND IRON WORKS, SHEFFIELD.

British and Foreign Safety Fuse Company,

REDRUTH, CORNWALL,

MANUFACTURERS OF

SAFETY FUSE, FOR MINING AND QUARRYING PURPOSES.

PRICES ON APPLICATION



For Excellence
 and Practical Success
 of Engines.



Represented
 Model exhibited
 this Firm.

HARVEY AND CO.,
 ENGINEERS AND GENERAL MERCHANTS
 HAYLE, CORNWALL.

LONDON OFFICE.—186, GRESHAM HOUSE, E.C.

MANUFACTURERS OF
 PUMPING and other LAND ENGINES and MARINE STEAM ENGINES
 of the largest and most approved kinds in use, SUGAR MACHINERY,
 MILLWORK, MINING MACHINERY, and MACHINERY IN GENERAL.

SHIPBUILDERS IN WOOD AND IRON.

MANUFACTURERS OF
 HUSBAND'S PATENT PNEUMATIC STAMPS

SECOND-HAND MINING MACHINERY FOR SALE,
 IN GOOD CONDITION, AT MODERATE PRICES—viz.

PUMPING ENGINES; WINDING ENGINES; STAMPING ENGINES,
 STEAM CAPSTANS; ORE CRUSHERS; BOILERS and PITWORK of
 various sizes and descriptions; and all kinds of MATERIALS required for
 MINING PURPOSES.

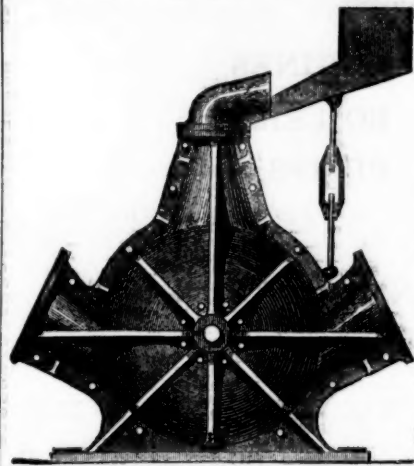
PULVERISING MACHINE,

FOR REDUCING

MINERALS, CHEMICALS, CEMENTS, CEREALS,

T. B. JORDAN AND SON,

52 GRACECHURCH STREET, LONDON.



SIMPLE
 DURABLE.
 EFFECTIVE

OTHER
 SPECIALITIES.

GOLD

REDUCING PLANT

HAND-POWER

ROCK DRILLS.

GENERAL

MINING PLANT

Illustrated Cata-
 logues on applica-
 tion.

THE
 BEST METAL FOR BUSHES,
 BEARINGS,
 SLIDE VALVES,

And other wearing parts of Machinery.

PUMPS, PLUNGERS,
 CYLINDERS, &c.

PHOSPHOR BRONZE

WIRE, TUBES,

SHEET, RODS

TOOLS, &c.

STEAM
 FITTINGS

SOLE

MANUFACTURERS

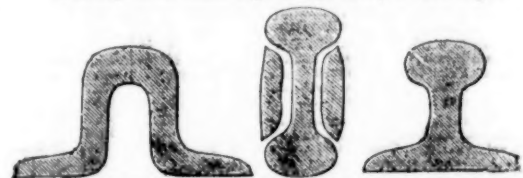
UNDER PATENTS.

THE

PHOSPHOR BRONZE
 COMPANY, LIMITED,

SUMNER STREET, SOUTHWARK,
 LONDON, S.E.

JOHN BEATSON & SON,
 40h, St. Mary's Gate, Derby.



IRON AND STEEL RAILS, of all sections, from 10 to 86 lbs. per
 yard, new perfect, new slightly defective, or second-hand, with Fish-plates,
 Bolts and Nuts, Chairs, Spikes, and Points and Crossings to match, when re-
 quired.

STEEL AND IRON WIRE ROPES, LOCOMOTIVE ENGINES, &c., &c.
 BARS, PLATES, SHEETS, &c.
 STEEL OF ALL KINDS. FIG IRON OF ALL KINDS.
 Delivered at all Railway Stations and Ports in Great Britain.

WILLIAM BENNETTS.

PATENT MINERS'

SAFETY FUSE
 MANUFACTURER.



This manufacture embraces all the latest improvements for use in
 Blasting in Mines, Quarries, or for Submarine Purposes; and is
 adapted for exploding Gunpowder, Dynamite, or any other Exple-
 sive; and is made suitable for exportation to any part of the world.
 Price Lists and Sample Cards on application.

All communications to be addressed—

ROSKEAR FUSE WORKS,
 CAMBORNE CORNWALL.

SMALL ENOUGH TO CARRY IN THE POCKET ANEROID CASE.

PRACTICAL HYPSONETRY: A Method of DETERMINING
 ALTITUDES (Heights of Mountains and Depths of Mines) accurately and
 almost instantaneously, with the Aneroid Barometer, WITHOUT TABLES.

Price One Shilling, post free
 London: MINING JOURNAL Office 26, Fleet-street, E.C.

NON-DIVIDEND MINES—continued

NON-DIVIDEND MINES—continued.

Shares.		Paid.	Last mt.	Clasp.
50000	North Molton,* c, m, t, Devon.....	1	0	0
50000	North Penwithal, t, c, Gwennap.....	2	11	6
2936	North Trekerby, t, St. Agnes.....	1	0	0
8000	Northern,* t, Durham.....	8	17	10
40000	Okei Tor,* t, c, d, Calstock.....	1	10	0
80000	Old Shepherds,* c, Cornwall.....	1	0	0
60000	Owen Van & Tregur,* c, t, Marazion.....	1	0	0
12000	Pandora,* t, Carnarvon.....	2	0	0
40000	Parrys Corporation,* c, Anglesea.....	1	0	0
7500	Pateley Bridge, t, Yorkshire.....	1	0	0
6000	Pedin-an-dra, t, Redruth.....	3	7	0
14000	Pelyn Wood, c, Lanlivery.....	0	2	0
8000	Pennant, t, bar, North Wales*.....	5	0	0
20000	Penegarrog, t, Carmarthenshire.....	1	0	0
12000	Pentol,* t, Flintshire.....	1	0	0
10000	Perran Consols.....	0	2	0
12000	Perran Wheel Alfred, c.....	0	2	0
3000	Polroheo, t, Crowan.....	0	12	8
10000	Polrose, t, Cornwall.....	1	5	0
10000	Port Nigel Syn,* t, Carnar. (4000 l.).....	0	15	0
8000	Prince Royal, t, c, s-l, St. Agnes.....	1	0	0
12000	Prinice of Wales, c, s, Calstock.....	0	19	8
15000	Royalton,* t, St. Columb.....	1	0	0
36000	Russell United,* c, Tavistock.....	0	15	6
30000	Silver Hill,* Callington.....	1	0	0
50000	Sinclair,* t, St. Whitford.....	1	0	0
40000	Sorbridge,* c, Horrabridge.....	1	0	0
6000	South Carbis, t, c, Redruth.....	0	10	0
12000	South Venn,* c, t, St. Austleigh.....	1	0	0
5000	South Dolcoath, t, c, Illogan.....	1	0	0
6000	South Penwithal,* t, c, Gwennap.....	2	13	6
6000	South Tolarne, t, c, Camborne.....	5	11	8
2043	South Wheel Crofty, c, Illogan.....	3	4	6
40000	Tamar, s-l, Bearaiston*.....	1	0	0
110000	Tankerville Gt. Consols, t, Salop*.....	1	0	0
20000	Tin Hill, t, St. Stephens.....	1	0	0
12000	Trebartha Lemanur, t, Northill.....	0	1	6
6000	Tregembo, t, c, Cornwall.....	1	0	0
10000	Tresavean,* t, c, Gwennap.....	3	10	0
10000	Trevaran United,* c, Cornwall.....	0	8	0
8000	Trevaunance, t, St. Agnes.....	0	8	0
12000	Trince Consols, t, c, Gwennap.....	0	5	0
35000	Un. Van & Glyn, t, c, (17500 pref. sh.).....	1	0	0
1000	Vaughan,* t, Cardiganhire.....	10	0	0

Director,* 4, Oileen, Flintshire	0	14	0...
--	---	----	------

2000	Violet Seton, <i>c</i> , Camborne	12	0	0	6	1	6
15000	Vincent, <i>c</i> , Altarnun	1	0	0	—	—	—
12000	West Ashton, <i>t</i> , Carnarvon	1	0	0	—	—	—
1000	West Cardon, <i>c</i> , St. Just	0	7	9	1 3/4	1 3/4	1 3/4
3000	W. Craven Moor, <i>t</i> , Pateley Bog [†]	1	0	0	—	—	—
12000	West Orebou, <i>c</i> , Tavistock	6	9	0	—	—	—
10240	West Devon Consols, <i>c</i> , Calstock	1	2	0	3 1/2	3 1/2	3 1/2
10000	West Godolphin, <i>t</i> , <i>c</i> , Breage	1	1	0	1 1/2	1 1/2	1 1/2
20000	West Lisburne, <i>t</i> , Cardigan	1	0	0	3 1/2	3 1/2	3 1/2
30000	West Mary Ann, <i>t</i> , Menheniot	1	13	0	1	—	—
20000	W. Rasey Bridge, <i>c</i> , Yorkshire	1	0	0	3 1/2	3 1/2	3 1/2
12000	West Bassin, <i>c</i> , Llanabon	1	1	6	3 1/2	3 1/2	3 1/2
8000	West Polbren, <i>t</i> , <i>c</i> , St. Agnes	0	0	0	1 1/2	1 1/2	1 1/2
5190	West Poldice, <i>St. Day</i>	6	9	0	1 3/4	1 3/4	1 3/4
2048	West Wheel Frances, <i>t</i> , Illogan [†]	34	13	3	1 3/4	1 3/4	1 3/4
3000	West Wheel Peever, <i>t</i> , Redruth	3	0	6	6 1/2	6 1/2	6 1/2
2400	West Wheel Seton, <i>c</i> , Camborne [†]	15	0	0	17 1/4	1 1/4	1 1/4
6000	Wheel Agar, <i>c</i> , Illogan [†]	18	6	0	17	16	16
514	Wheel Bassin, <i>c</i> , Llanabon	0	0	0	8	7	7
3000	Wheel Boats, <i>c</i> , Redruth	0	0	0	—	—	—
50000	Wheel Castle, <i>c</i> , <i>t</i> , St. Just	1	0	0	15 1/4	1 1/4	1 1/4
12000	Wheel Coates, <i>t</i> , St. Agnes	0	5	6	—	—	—
2585	W. Comf., & No. Tres., <i>c</i> , Gwennap	2	0	2	1 1/4	1 1/4	1 1/4
50000	Wheel Elizabeth, <i>t</i> , Cornwall	1	0	0	—	—	—
15000	Wheel George, <i>t</i> , <i>St. Agnes</i>	1	0	0	—	—	—
1200	Wheel Jane, <i>t</i> , Carnarvon	1	0	0	—	—	—
12000	Wheel Jewell, <i>c</i> , St. Hilary	2	4	0	1	3 1/4	3 1/4
20000	Wh. Honey and Trelawny, <i>c</i> , Lisk	2	0	0	5 1/4	5 1/4	5 1/4
12000	Wheel Lucky, <i>t</i> , Callington	0	2	3	2 1/4	2 1/4	2 1/4
2000	Wheel Owies, <i>t</i> , St. Just	7	3	0	8	7	7
600	Wh. Prussia, & Cardew, <i>c</i> , <i>St. Erth</i>	0	0	0	1 1/4	1 1/4	1 1/4
8000	Wh. Silver & Langlois, <i>c</i> , <i>St. Agnes</i>	1	0	0	1	3 1/4	3 1/4
1000	Wheel Sisters, <i>t</i> , Llanabon	3	10	0	1 1/4	1 1/4	1 1/4
4098	Wheel Uny, <i>t</i> , <i>c</i> , Redruth	0	3	0	5	3	3
60000	Yeoland Consols, <i>c</i> , Devonshire	0	12	6	1	1	1
4000	Ystwith, <i>c</i> , Cardigan	1	0	0	3 1/2	3 1/2	3 1/2

b, blende; *c*, copper; *g*, gold; *l*, lead; *s*, silver; *sl*, slate; *sl*, silver-lead; *t*, tin; *z*, zinc; *i*, iron; *a*, arsenic.

* Limited Liability Companies; † quoted on the Stock Exchange

I have paid dividends.

© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd

GAS COMPANIES

Issued, Shares.		Pd. Cos. pr.	
5000	20. Bahia [L]	all...	1914 218
10000	5. Bombay [L]	all...	516 65
10000	5. Ditto, New [L]	4...	416 43
97700	81k. Brentford Consolidated	100...	157 162
10000	20. British	all...	38 40
14000	10k. Commercial	all...	207 218
20000	20. Continent and Canal	all...	19 20
20000	20. Do. do. New, 1889, 1872	4...	18 19
10000	20. Do. do. 7 per ct. Preference	25 1/2	27 1/2
23408	10. European [L]	all...	19 20
95500	81k. Gaslight and Coke, A. Ord.	100...	184 190
4000	81k. Do. 4 per cent. Deb. Stock.	100...	128 130
5000	10. Hong Kong and China	all...	14 15
900000	81k. Imperial Continental	100...	193 201
38500	81k. London	100...	207 213
12000	5. Malta & Mediterranean	all...	216 4
10000	5. Metrop. of Melbourne s.p.c. Deb. ..	all...	19 20
20000	20. Monte Video [L]	all...	14 15
10000	5. Ottoman	all...	38 40
10000	5. Oriental [L]	all...	7 8
27500	50. Rio de Janeiro [L]	all...	2314 214
100000	81k. South Metropolitan, A.	100...	212 218
50000	81k. Ditto, ditto, B.	100...	191 195

TRAMWAYS.

Issued, Shares.		Pd. Cos. pr.	
40000	5. Anglo-Argentine [L]	all...	616 6
100000	10. Barcelona [L]	all...	1016 11
71400	10. Belfast Street Tramways	all...	716 24
3000	10. Glasgow, Ordinary	all...	716 24
3000	10. Ditto, s. per cent. Preference ..	all...	716 24
9290	10. Bristol [L]	10	716 24
25000	10. Bordeaux Tram & Omnibus [L] ..	all...	1016 11
3200	10. Chester [L]	all...	916 10
24000	10. Dublin	all...	916 10
14000	10. Edinburgh Street Tramways	all...	916 10
10000	10. Glasgow Tramway & Omnib. [L] ..	9	1016 11
10000	10. Hughes Loco. and Tram. works.	all...	916 10
7500	10. Hull Street Tramways	all...	916 10
7500	10. Imperial [L]	all...	916 10
34000	10. Liverpool Unit. Tram & Om. [L] ..	all...	1116 12
25000	10. London [L]	all...	1116 12
15000	10. London Street Tramways	all...	1116 12
90000	10. North Metropolitan	all...	1716 18
8000	10. Nottingham and District [L]	all...	916 10
15947	10. Provincial [L]	all...	916 10
6000	10. Sheffield	all...	916 10
5000	10. Southampton	all...	916 10
6000	10. Sunderland [L]	all...	916 10
10000	10. Tyneside	all...	916 10
12000	10. Tramways of France [L]	all...	1116 12
16500	10. Tramways of Germany [L]	all...	1116 12
20000	5. Tramways and Gen. Works [L]	all...	1116 12

TELEGRAPH COMPANIES

Shares.	TELEGRAPH COMPANIES.		Pd.	Clos. 57.
50k. Anglo-American	100	0	00	50 1/2
10 Anglo-Submarine	10	0	00	12 1/2
10 Cuba	10	0	00	12 1/2
10 Direct Spanish	9	0	00	12 1/2
20 Direct United States Cable ..	20	0	00	11 1/2
10 Eastern	10	0	00	11 1/2
10 East. Eastn. Austr. and C. ..	10	0	00	11 1/2
10 German United	10	0	00	12 1/2
10 Great Northern	10	0	00	10 1/2
25 Indo-European	25	0	00	38 3/4
10 London Platino Brazilian	10	0	00	4 1/2

London: Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors), at their office, 25, FLEET STREET, where all communications are to be addressed. — February 10, 1887.

London: Printed by RICHARD MIDDLETON, and published
by HENRY ENGLISH (the proprietors), at their office,
26, FLEET STREET, E.C., where all communications are
requested to be addressed.—February 10, 1903.